OMEGA®
MEASUREMENT AND CONTROL UPDATE™

Volume One, Number One

Premiere Issue

OMEGA®
ENGINEERING, INC.
(203) 359-1660

CALL (203) 359-1660 OMEGA

TEMPERATURE AND CONTROL

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U.S.A. AND CANADA

No other company sells genuine **OMEGA**® Products! To give ***you***, our valued customer, the ***best service possible*** all our sales are ***Direct!*** We have no authorized distributors or representatives—no middleman!

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OMEGA ENGINEERING, INC.
P.O. Box 4047
Stamford, CT 06907-0047
Attn: Dept. 3000

or Our FAX number is (203) 359-7700

For fast, efficient processing of your order, please include: Purchase Order Number, Bill to and Ship to Addresses, Part No., Description of Items Ordered, and the Telephone Number of the Requisitioner. Please mark Confirming Orders ***"Confirmation Only, Do Not Duplicate."***

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- ✔ MEASURE
- ✔ CONTROL
- ✔ INTERFACE

TEMPERATURE AND PRESSURE!

WITH YOUR COMPUTER

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3 NEW HANDBOOKS, FREE!

OMEGA 1984 PRESSURE AND STRAIN MEASUREMENT HANDBOOK
OMEGA THERMOCOUPLE AND SENSOR COMPUTER INTERFACE HANDBOOK
OMEGA 1984 COMPLETE TEMPERATURE MEASUREMENT HANDBOOK AND ENCYCLOPEDIA
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YES!

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- ☐ **1984 Temperature Measurement Handbook and Encyclopedia™**
- ☐ **1984 Pressure Measurement Handbook**
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OMEGA®
ENGINEERING, INC.
(203) 359-1660

OMEGA® Pressure Analyzer Kit With Alarms

Now! Pressure Too!

P 404

Complete Measurement Kit For Fluid Systems!

- Easy to Use Hand Held Read Dynamic Systems or Capture Peaks
- Accurate: ±.75% FS
- Easy to Read, Repeatable, No Parallax Error
- Rugged Enclosure
- Convenient Automatic Shut-off, Automatic Zero, Direct Reading in PSI or BAR

Typical Applications

- Troubleshoot fluid systems.
- Calibrate installed gages.
- Verify the operation and setting of relief valves, pressure switches, etc.
- Test systems at roll off time.
- Perform preventative maintenance.
- Detect leakage.
- Run burst tests.

Kit Contains

- ✓ Pressure Analyzer
- ✓ Microbore Flexhose (3 feet)
- ✓ Couplings (Assortment)
- ✓ Alarm Adjustment Screwdriver

Audible Alarm Included

$650
P404
Complete Kit

To Order, Pressure Analog Kit

Kit Model Number	Price	Range
P404-1	$650	0-100 PSI
P404-10	650	100-1000 PSI
P404-70	650	700-7000 PSI

In Stock for Immediate Delivery!

To Order, Pressure Couplings

Steel Part No.	Price	Stainless Part No.	Price	Thread Type
P404A	$9.50	P404G	$21.00	1/8-27 NPT
P404B	9.50	P404H	21.00	1/4-20 NPT
P404C	10.75	P404J	24.00	7/16-20 UNF
P404D	10.50	P404K	23.75	M10 × 1
P404E	10.50	P404L	23.75	M12 × 1
P404F	10.50	P404M	23.75	M14 × 1.5

Extra Pressure Tight Couplings

Relative Humidity Measurement In the Palm of Your Hand

RH-10 $149
Humidity Only

- Hold Function
- Integral Sensor
- Case Included
- Relative Humidity Only

RH-20F or C $249
Humidity Plus Temperature

- °C or °F Scale
- Remote Sensor Probe
- Case Included

RH-10
$149

Rugged Carrying Case Included FREE!

Available Off-The-Shelf!

Measuring Ranges:
10% to 95% RH (All),
32° to 175°F (RH-20F),
0° to 50°C (RH-20C)

Accuracy:
±2.0% RH,
±0.5°F (RH-20F),
±0.5°C (RH-20C)

Relative Humidity and Temperature

Kit contains:

- ✓ Meter
- ✓ Sensor
- ✓ Interchangeable guards
- ✓ Rugged sintered hood
- ✓ 3-foot Extension cable
- ✓ ac Adaptor
- ✓ Recorder leads

OM-101 KIT $659

- Recorder Output of 1 mV per Degree or 1% RH
- Interchangeable Sensor Reads Relative Humidity and Temperature
- AC Adaptor for Continuous Use (110 or 220 V ac)

In Stock for Fast Delivery!

RH-101 F or C
$695

Measuring Ranges:
0% to 97% RH,
32°F to 104°F,
0°C to 40°C

Accuracy: ±1 Digit
Resolution: 1 Digit

LOW COST Infrared Measurement For Non-Contact Temperature

OS-500 Converts A Multimeter to A Thermometer!

- 1 mV per °C or °F

To Order, Specify:		
Model	**Price**	**Description**
OS-500F	$260	Sensor and 1 mV/°F Converter
OS-500C	260	Sensor and 1 mV/°C converter
OS-500-880-KIT	499	Sensor, converter and Model 880 Multimeter, stand

Available Off-The-Shelf!

Range: 0 to 500°F
0 to 260°C
Response Time: 1 second
Accuracy: ±1% RDG ±1 digit

BATTERY INCLUDED FREE!

OS-500 $260

OS-600 Totally Integrated System!

- Optical 8 to 14 Micron Filter Eliminates Interference
- 1 mV per °C or °F Output
- °C/°F Switchable

Target Size: ¼″ min at ½″ distance
Target Ratio: 1:3 (target to distance)
Analog Output: 1 mV per deg (C or F)

To Order, Specify:		
Model	**Price**	**Description**
OS-600	$490	Sensor and self-contained meter
OS-600-KIT	540	Sensor, meter, stand, and rugged carrying case

In Stock for Fast Delivery!

Range: 0 to 500°F
0 to 260°C

Response Time: 1 second
Accuracy: ±(1% RDG + 1 digit)

BATTERY INCLUDED FREE!

OS-500-STAND $30

OS-760 High Accuracy!

- Contact and Infrared Measurement
- Adjustable Emissivity
- Peak - Hold Function
- Calibrate Emissivity Using Type K Thermocouple
- 1 mV per °C Output
- 5/16″ Spot Size at 5¼″

To Order, Specify:		
Model	**Price**	**Description**
OS-760-KIT	$1400	Meter, IR radiation sensor, 5 ft. cable, type K thermocouple probe and handle, SMP connector, 5 foot output cable with banana plugs, and rugged carrying case

Available Off-The-Shelf!

Range: 50 to 700°C
Response Time: 100 m seconds
Accuracy: ±2°C, 0 to 200°C
±1½% RDG + 1 Digit over 200°C

BATTERY INCLUDED FREE!

NEW! Multifunction, Hand Held Thermometer

MODEL HH-80
$249

Dimensions:
3.2″ x 6″ x 1.28″

Probe Sold Separately

HH-80

- Peak-Hold Function
- Type E or K Thermocouple
- 0.1° and 1° Resolution
- °C/°F Switchable
- 0.1% RDG Accuracy

Rugged Protective Case Included FREE

To Order, Specify:

Model	Price	Range	Resolution
HH-80E Type E Thermocouple	$249	−328 to 1472°F −200 to 800°C	1°
		−148 to 391.8°F −100 to 199.9°C	0.1°
HH-80K Type K Thermocouple	$249	−328 to 2192°F −200 to 1200°C	1°
		−148 to 391.8°F −100 to 199.9°C	0.1°

In Stock for Fast Delivery!

See the OMEGA Temperature Measurement Handboook

Thermocouple Probe and Thermometer Kit With HH-80

$548
TK2 with HH-80

TR2-HH80-KIT

- Complete Thermocouple Selection for all Industrial and Laboratory Applications
- Seven Thermocouple Probes
- Complete Assortment of Accessories
- K or E Calibrations
- Rugged Carrying Case

KIT CONTAINS:

- ✓ Surface Probe
- ✓ Right Angle Probe
- ✓ Beaded Wire Thermocouple
- ✓ Three Miniature Sheath Probes (Diameters of 1/32″, 1/16″ and 1/8″ in 6″ SS Sheaths)
- ✓ Retractable Sensor Cable (Extends to 5 feet)
- ✓ Two Feet Armored Extension Cable
- ✓ 25 Feet 30 AWG Teflon Insulated Thermocouple Wire
- ✓ Two Pairs SMP Connectors
- ✓ HH-80 Digital Meter

To Order, Specify:

TK2-HH80-KIT AND THERMOCOUPLE TYPE

Available Off-The-Shelf!

Hand Held Meters For All Measurement Needs

Expanded 881 Series Meters

- Fully Portable Multimeters
- Measure Temperature with Type K Thermocouple (Model 881)
- Accurate
- Both models can be used with Pressure and Strain Transducers

Included FREE!
Test leads Included with Both Models!
Model 881 Includes Beaded Wire Thermocouple

To Order, Specify:

Model	Price	Accuracy dc Voltage	dc Current	ac Voltage*	ac Current*	Resistance
880	$134	±(.25% rdg + 1 digit)	±(.75% rdg + 1 digit)	± (1 % + 3 digits)	±(2% rdg + 2 digits)	±(0.5% rdg + 4 digits)
881F	209					
881C	199					
Sensitivity		100μV	1μA	100μV	1μA	100mΩ

Model	Range	Res.	Accuracy
881F	0 to 2000°F	1°F	±(5°F + 1 digit) up to 225°F
881C	– 20 to 1370°C	1°C	±(3°C + 1 digit) up to 150°C

**TRMS with Model 881 ± accuracy % + 9 digits*

See The OMEGA Temperature Measurement Handbook

Temperature Models

- °C/°F Switchable
- Accepts Dual Input
- Selectable Scales

TYPE K MODEL 871 $225

- 0.1° Resolution
- Uses Standard Phone Jack
- °C or °F Models
- Series 400 Thermistors

°F DISPLAY MODEL 865 $139

- Switchable for 3 or 4 Wire RTD's
- 0.1°/1° Selectable
- Uses Standard TA4F Connector

°F DISPLAY MODEL 868 $249

THERMOCOUPLE!

To Order, Specify:

Model	Type	Range	Res.	Accuracy
871	K	–40 to 199.9°F	0.1°F	±(0.25% rdg +1.8°F
		–40 to 1999°F	1°F	
		–40 to 199.9°C	0.1°C	±(0.25% rdg +1°C)
		–40 to 1370°C	1°C	
872	J	–40 to 199.9°F	0.1°F	±(0.25% rdg +1.8°F
		–40 to 1400°F	1°F	
		–40 to 199.9°C	0.1°C	±(0.25% rdg +1°C)
		–40 to 760°C	1°C	

THERMISTOR!

To Order, Specify:

Model	Range	Res.	Accuracy
865	–70 to –40.1°F	0.1°F	±(0.3%rdg + 1°F)
	–40 to 199.9°F	0.1°F	±(0.3%rdg +0.5°F)
	–70 to 300°F	1°F	±(0.3%rdg + 1°F)
866	–55 to –40.1°C	0.1°C	±(0.3%rdg + 0.6°C)
	–40 to 150°C	0.1°C	±(0.3%rdg + 0.3°C)

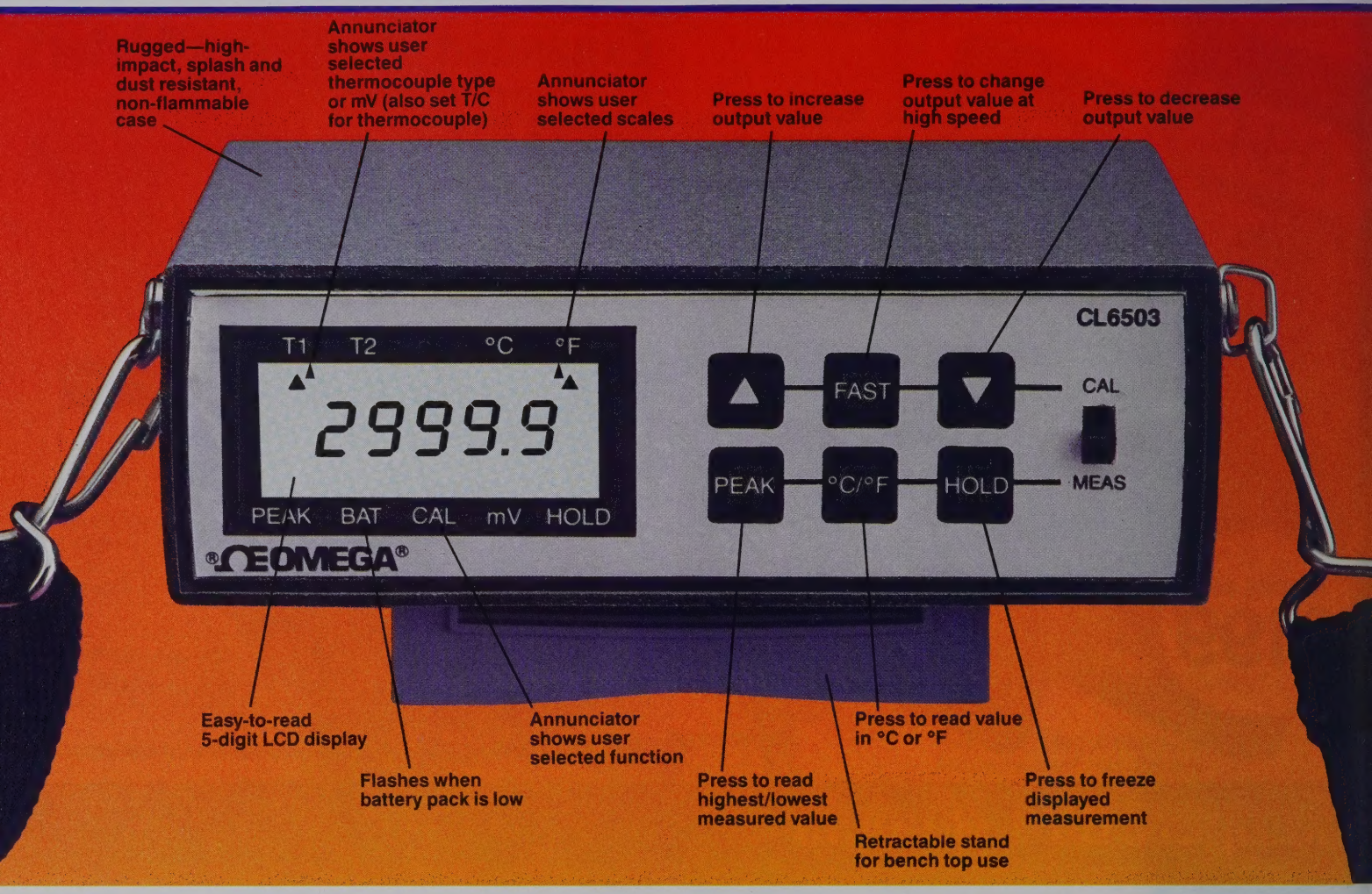
RTD!

To Order, Specify:

Model	Range	Res.	Accuracy
868	–199.9 to 150.1°F	0.1°F	±1.0°F
	–150.0 to 199.9°F	0.1°F	±0.4°F
	–360 to 1100°F	1°F	±2°F
869	–199.9 to –150.1°C	0.1°C	±1.5°F
	–150.0 to 199.9°C	0.1°C	+0.3°C
	–220 to 630°C	1°C	+1°C

In Stock for Fast Delivery!

Precision Calibration and Measurement In One Instrument!


Rugged—high-impact, splash and dust resistant, non-flammable case
Annunciator shows user selected thermocouple type or mV (also set T/C for thermocouple)
Annunciator shows user selected scales
Press to increase output value
Press to change output value at high speed
Press to decrease output value
CL6503
T1 T2 °C °F
2999.9
PEAK BAT CAL mV HOLD
FAST
CAL
PEAK
°C/°F
HOLD
MEAS
OMEGA
Easy-to-read 5-digit LCD display
Flashes when battery pack is low
Annunciator shows user selected function
Press to read highest/lowest measured value
Retractable stand for bench top use
Press to read value in °C or °F
Press to freeze displayed measurement

CL6503 PORTABLE CALIBRATOR, THERMOMETER

A single display clearly indicates temperature or millivolt data, instrument setup, and thermocouple faults. Five digits read from −200 to +1820°C (−328 to 3308°F) or −9.998 to +99.998 mV. Annunciator arrows show the selected mode, range, unit of measure, hold and peak functions. And after nearly 8 hours of continuous use on a single charge, the battery annunciator will flash, alerting you to recharge—well in advance of power loss.

Moreover, if calibrator output or input exceeds the selected thermocouple range, the display reads "HI" for overrange and "LO" for underrange or an open thermocouple condition. Whether measuring or calibrating, the OMEGA CL6503 has the information you need . . . on one easy-to-read display.

Instruments are shipped with both J and K input active on the rear panel switch. Any two of 11 thermocouple types may be internally selected: J—K—T—E—N—Platinel II—J-Din—T-Din—R—S—B

Consult Sales Department for Full Part Numbers and Ranges

Model	Price	Description
CL6501 CL6501	$460	°C thermometer (°F internally selectable) with NiCad battery pack, charger, neckstrap, and vinyl case.
CL6502 CL6502	560	Same as above with controls for peak reading, °C/°F switch, hold function
CL6503	765	Calibrator-thermometer with all features above plus a precision calibration source

CL6503

- **Easy to Use!**
- **Rugged Portable Case**
- **High Accuracy**
- **11 Internally Switchable Thermocouple Types Plus mV Input**
- **Maximum/Minimum Reading**
- **Hold Function**
- **°C/°F Switchable**
- **Complete Manual Supplied**

CL6503 $765

Available Off-The-Shelf!

110 V ac Charger Included FREE!

NEW!

LAB MONITOR 1000 FROM OMEGA®

A BUILT-IN VOICE SYNTHESIZER REPORTS LOCALLY & ALSO PHONES ANYWHERE WITH AUTOMATIC DIRECT DIAL

Easy to Use!

2″ H × 8″ W × 8½″ D

Operates from any standard 110 V outlet with battery backup

TO ORDER: SPECIFY LM-1000

$195 P

BATTERIES AND LOCAL TEMPERATURE SENSOR INCLUDED

The LM-1000 Calls Out When There's an Alarm Condition

The LM-1000 automatically reacts to these programmed alarm limits by phoning in sequence up to four numbers. It will call until its message is acknowledged. The Synthesized English Message Includes:

- **The Monitor I.D. Number**
- **The Type of Alarm**
- **The Time**
- **The Temperature**
- **The Power Status**
- **The Sound Level**
- **The Alert Status**
- **The Battery Condition**

The LM-1000 reports status on request. You can call the **LM-1000** at any time to verify the conditions in your office or laboratory. After a preset number of rings, it will reply in Synthesized English with the same information, plus the values of the high and low temperature alarms that you have set.

ACCESSORIES:

(connect to 3 available alarm channels)

LM-1001 MAGNETIC REED SWITCH **$12**
Consists of two parts, a magnet in a plastic housing and a switch with screw terminals. Should be mounted on a non-moving surface, in close proximity to one another (less than ⅝″ apart). Use copper wire to attach to unit.

LM-1002 WATER LEVEL SWITCH **$42**
Provides early warning of presence or absence of water. To detect presence of water, place switch on an absorbent material. To detect absense of water, rest sensor portion of unit in water. Use copper wire to attach to unit.

LM-1003 REMOTE TEMPERATURE SENSOR **$44**
Used in place of the local temperature sensors to provide remote temperature monitoring. Use 26 awg or heavier copper wire if sensor is more than 100 ft. from the unit.

LM-1004 REMOTE LISTENING DEVICE
Set of two one-way intercoms allows remote monitoring of sound. Plug one into a 110 V outlet at the remote location and the other into a 110 V outlet next to the microphone on the unit.

FREE! 3 NEW! HANDBOOKS CALL TODAY:

OMEGA 1984 PRESSURE AND STRAIN MEASUREMENT HANDBOOK
OMEGA THERMOCOUPLE AND SENS
COMPUTER INTERFACE HANDBOOK
OMEGA 1984 COMPLETE TEMPERATURE MEASUREMENT HANDBOOK AND ENCYCLOPEDIA

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Bulletin No.
PD01B68

NEW!
TEMPERATURE AND ALARM MONITOR REPORTS IN ENGLISH ON-SITE & OVER THE PHONE

LAB MONITOR 1000 FROM OMEGA®

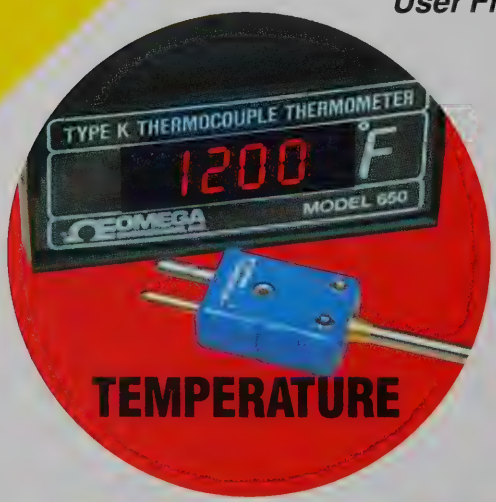
IT TALKS!

ONLY
$195 P
COMPLETE

Monitors Time, Temperature, AC Power, Audio Alarms, Switch Contacts and Battery Status. It Will Report Current Conditions or Auto-Dial A Warning In The Case Of Alarm.

Plugs into any RJ-11C telephone jack

User Friendly!



TEMPERATURE

CONTROL STATUS

PRESSURE

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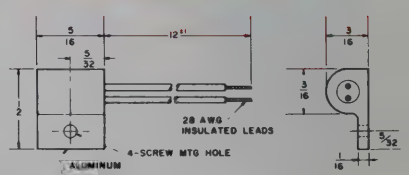
ENGINEERING, INC.
(203) 359-1660

REMOTE TEMPERATURE SENSOR LM-1003
$44



NEW! Hand Held Calibrator For Temperature and Pressure

CL-477
$750

Dimensions:
2.75″ H
× 3.75″ W
× 8.35 L

Calibration and Indication With A Hand Held's Convenience!

CL477

Includes:

- ✓ Type K Beaded Wire Thermocouple
- ✓ 2 Pair Standard Test Leads
- ✓ 1 Pair Alligator Leads
- ✓ Adaptor
- ✓ 1 pair Banana Plug Adaptors
- ✓ Soft Carrying Case

- Calibrates and Measures Temperature (Thermocouple Types J, K, & T) Voltage Current (measure only)
- 0.1 and 1 unit Resolution in One Package
- 5 Current Ranges Suitable for use with Most Pressure Transducers
- °C/°F Switchable

To Order, Specify:

Model	Price	Input	Range	Accuracy
CL477	$750	Type J T/C	−318 to 1858°F −194 to 1014°C	±1.8°F ± .1 rdg
		Type K T/C	−308 to 2501°F −189 to 1372°C	±1°C ± .1% rdg
		Type T T/C	−360 to 758°F −217 to 403°C	
		mV	−39.3 mV to 111.9 mV	±.1% rdg ± 2 counts
		mA	00.00 mA to 27.98 mA	±.1% rdg ± 2 counts

Available Off-The-Shelf!

NEW! Portable Logging Thermometer With Memory

OM-150
$449

Shown Smaller Than Actual Size

Probe Sold Separately—See The OMEGA Temperature Measurement Handbook

ALSO AVAILABLE—
OM-150 KIT
$675

In Stock for Fast Delivery!

OM-150 Kit Includes:

- ✓ OM-150 with RS-232C Option
- ✓ Type K Handle Probe
- ✓ RS-232C Adaptor
- ✓ AC Adaptor
- ✓ SMP Connector
- ✓ Beaded Wire Thermocouple
- ✓ Case

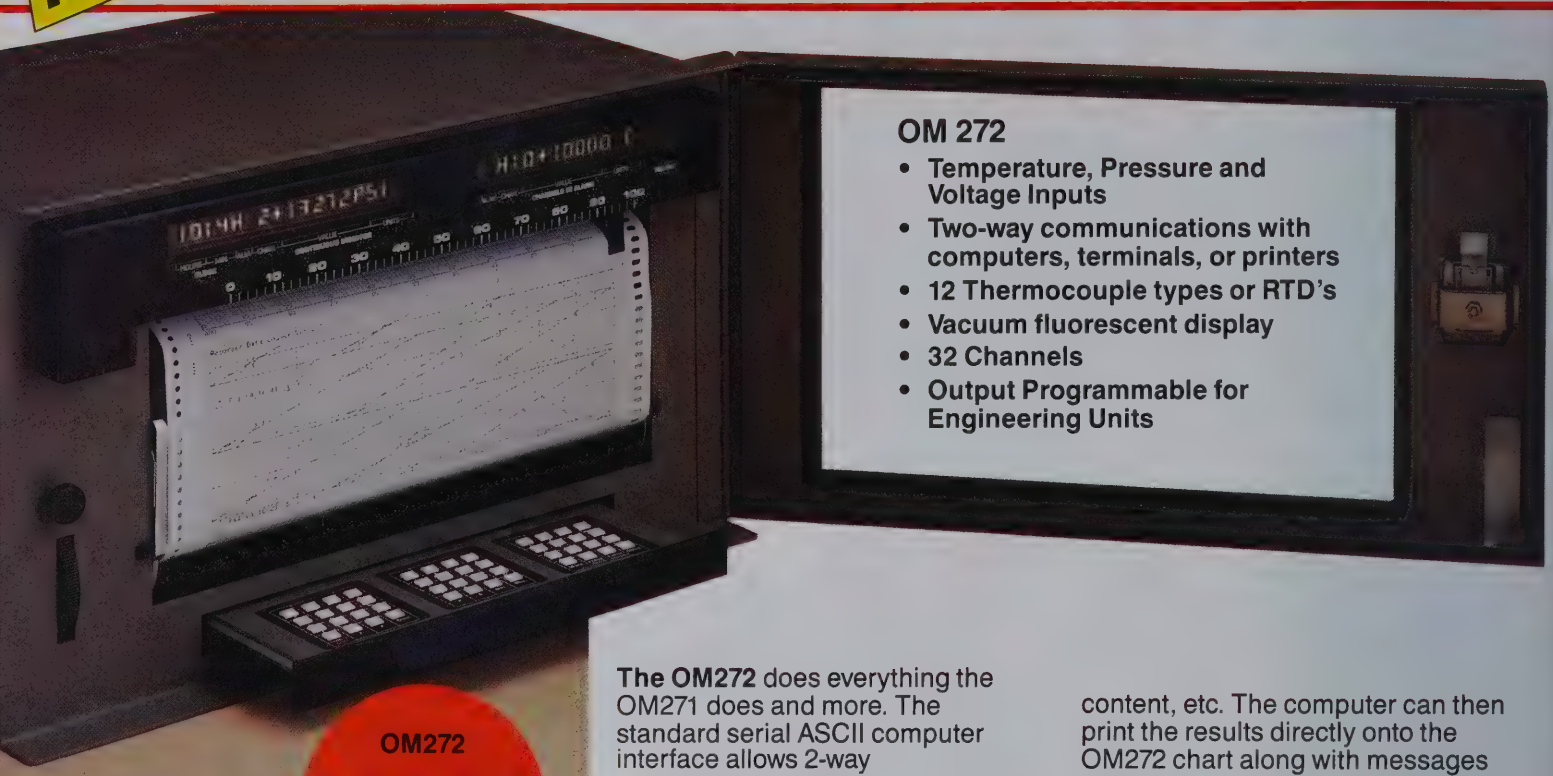
OM-150

- Logs up to 32 Type K Thermocouple Readings
- Recalls Max, Min, and Differences from a Reference Temperature
- Selectable Logging Interval
- RS-232C Interface Optional
- °C/°F Switchable
- 0.1°/0.2° Resolution
- Includes SMP Connector, Beaded Wire Thermocouple and Batteries

To Order, Specify:

Model	Price	Range	Accuracy
OM150	$449	−148 to 2502°F −100 to 1372°C	±.05%FS
OM150-KIT	675		

NEW! Data Logger With 2-Way RS232C Communications and Data Storage



OM 272

- Temperature, Pressure and Voltage Inputs
- Two-way communications with computers, terminals, or printers
- 12 Thermocouple types or RTD's
- Vacuum fluorescent display
- 32 Channels
- Output Programmable for Engineering Units

OM272
$4400

Available Off-The-Shelf!

The OM272 does everything the OM271 does and more. The standard serial ASCII computer interface allows 2-way communications with practically any printer, terminal, or computer. Signals from thermocouples, RTD's, and other sensors can be digitized by the OM272 and easily transmitted to a computer for additional calculations such as averaging, BTU content, etc. The computer can then print the results directly onto the OM272 chart along with messages or instructions for the operator.

The OM272 is easily programmable to record in any one of three modes: trend, trend/log, or datalog. Chart speed is programmable from 0 to 120 in/hour in increments of 0.01".

OM 271

- New! Slide Out Chassis for Easy Access
- J, K, T, E, R, S, B, G, C, D, N, and Pt 11 Thermocouples plus ΔT Function
- Program Error Prompting
- °F or °C Readout
- Two Speeds in Auto Mode
- Keyboard Locked Without Password
- Five Column Data Log Mode
- Remote Programming Through ASCII Input

COMMON SPECIFICATIONS (OM 271/OM 272)

Scan Cycle Time: Scans all input signals and alarm set points every two (2) seconds
Print Cycle Time: All 32 channels can be printed in less than 10 seconds in trend mode
Chart Speeds: Keyboard selectable from 0.01"/hour to 2"/minute in 0.01" increments or the metric equivalent
Alarm Contacts: One common SPDT contact closure is provided for high alarms and one for low alarms. The contacts are rated 0.5 amps @ 110 V ac, non-inductive.
Span: 1 mV minimum, 10 Volt maximum
Accuracy: < 0.3% of full scale for all ranges of 10 mV or more
< 1% of full scale for 1 mV span.
Automatic Calibration: Contains a built-in precision reference source and automatically checks both zero and full scale every two (2) seconds and makes adjustments if needed.
Dimensions: H: 10.50" (267 mm) x W: 19" (483 mm) x D: 11.25" (286 mm).

To Order Options:

OM270-R32	$1050	RTD Current Source
OM272-ARB	200	Alarm Relay Board for OM272 Only

NEW! Programmable Data Logger

OM-400 Series

- 6 Thermocouple Types, J, K, T, E, R, and S In One Unit
- Full ASCII Printing Capability
- 10 and 40 Channel Models

Programmable For:

- ✓ High and Low Limit Alarms
- ✓ Logging Interval from 1 Data Point/Sec. to 1 per 24 Hrs. in 1 Sec. Increments
- ✓ Number of Channels Scanned
- ✓ Decimal Point Locations
- ✓ Correct Engineering Units
- ✓ Day and Time
- ✓ Channel Hold

OM-410-TC
$1995

Probes Sold Separately

To Order, Specify:				
10 Channel		40 Channel		Input Type
OM410	$1995	OM440	$2650	Thermocouple

In Stock for Fast Delivery!

Probe Sold Separately—See the OMEGA Temperature Measurement Handbook

Now Available! OM-202 Low Cost 40 Channel Scanner

OM-202-40

- 40 Thermocouple Channels
- J, K, T, E, R, S or B Thermocouple Types
- High/Low Alarms
- Compact

OM-202-40
$1995

Available Off-The-Shelf!

Most Popular Models		
40 Channel		Input Type
OM-202-40JF	$1995	J Thermocouple
OM-202-40KF	1995	K Thermocouple

Other models available—Consult Sales Department.

Dimensions: 9.5" SQ x 7.4" H

NEW! Precision XY Recorder

$149

TAC-386 thermocouple Linearizer—See the OMEGA Sensor to Computer Interface Handbook

RD200 XY RECORDER

- 11 mV Input Ranges: 1 mV to 2,000 mV/Inch
- 8 Timebase Ranges: 1 Sec to 200 Sec/Inch
- Takes Up to 11 × 17 Paper
- Recording Area 10″ × 15″
- Remote Control Through TTL Shift and Contact Closure

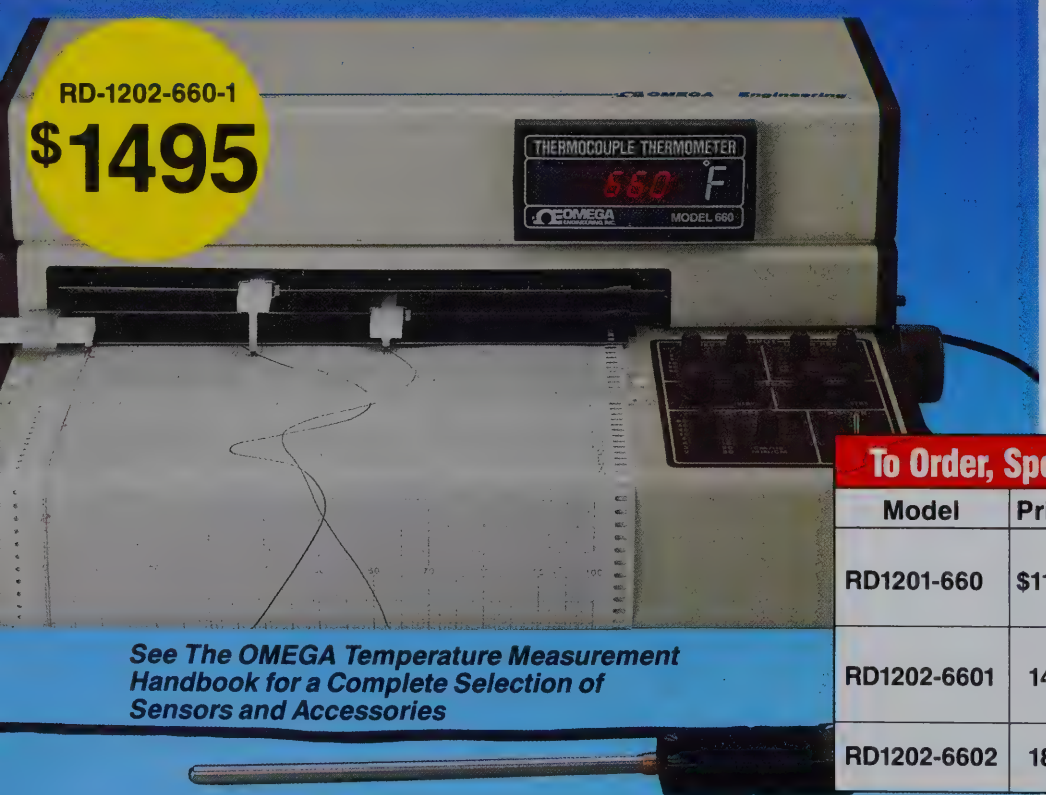
To Order, Specify:

RD-200

$1500

Many Other Recorders Available—Consult the latest OMEGA® Temperature Measurement Handbook and Encyclopedia™

Strip Chart Recorder and Precision Digital Thermometer In One Integrated Instrument



See The OMEGA Temperature Measurement Handbook for a Complete Selection of Sensors and Accessories

Probes Sold Separately

RD 1202-660-1

- J, K, T, E, R, and S Thermocouple Types All In One Instrument
- Linearized and Cold Junction Compensated
- Switch Selectable Thermocouple Type, °F/°C
- 1 mV/Degree Recording
- Easy-to-Read Digital Display

To Order, Specify:

Model	Price	Description
RD1201-660	$1125	One channel, switchable thermocouple/mV input, one digital readout
RD1202-6601	1495	Two channel, one switchable input one mV only input, one digital readout (pictured)
RD1202-6602	1895	Two switchable channels and two digital readouts

Other models available—Consult Sales Department.

NEW!

Microprocessor Controlled Strip Chart Recorder

RD-4501
$977

RD 4501

- System controlled through any combined RS-232C/standard parallel printer port
- Automatic self-test function for fast problem recognition
- Remote set-up of:
  - Chart speed
  - Span
  - Zero check
  - Chart repeat
  - Chart start/stop
  - Pen up/down
  - Event mark
- Digital interface and zero suppression standard
- Input Ranges: 1 mV to 20 V/20 cm span

To Order, Specify:

Model	Price	Description
RD4501	$ 997	One Channel
RD4502	1497	Two Channel

Dimensions:
4" H x 15" W x 12.5" D

In Stock for Fast Delivery!

OMEGALINE™ Precision Laboratory Recorders

Economical Dual Channel Recorders

- Web feed chart drive—accurate, reliable, self-aligning
- Simple chart loading
- Sprocketless paper
- Integral Tear Bar
- Zero Offset—10% to 110%
- Seventeen chart speeds

OM5217-1M
$1070

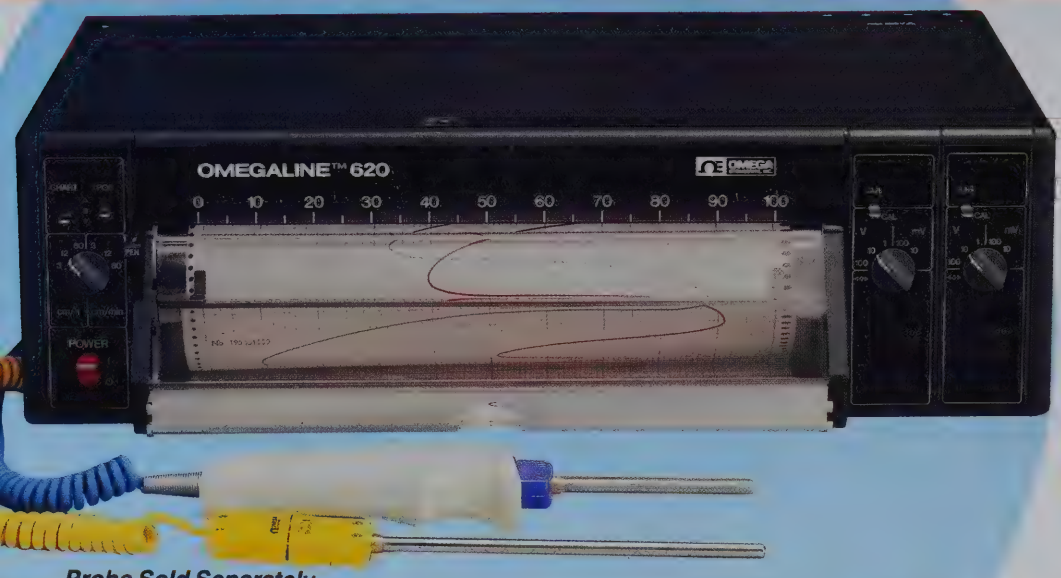
The web feed allows the use of sprocketless paper. Gives a fileable, standard size record without annoying or expensive sprocket holes.

To Order, Specify:

Model	Price	Description
O-5117-5M	$ 895	One Channel, 5 mV Ranges
O-5217-1M	1525	Two Channel, 5 mV Ranges
O-5217-5M	1070	Two Channel, Fixed 10 mV Range

Available Off-The-Shelf!

Low Profile Vertical Recorder OMEGALINE™ 620



Probe Sold Separately

MODEL 620

- Direct Temperature Recording
- mV Input for Pressure Transducers
- Mix and Match Thermocouple or mV Modules
- Quartz—Controlled 6 Speed Chart Drive—3, 12, 60 cm/hr, cm/min

620-2-KK

$1380

250 mm Chart Width
2 type K Thermocouple Input Modules

MILLIVOLTS

- Fixed and Variable Gain 1 mV to 100 V Full Scale
- −5% to 105% Continuous Zero Offset
- 0.5% Accuracy
- 0.2% Linearity
- High Input Impedance

TEMPERATURE

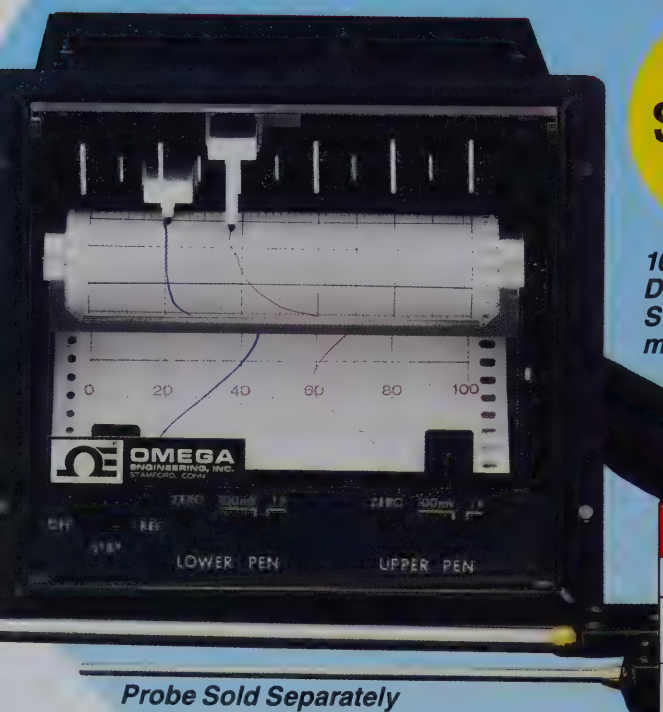
- Thermocouple Types J and K
- Electronic Linearization
- Cold Junction Compensation
- 1.5% Accuracy F.S.
- Calibrated Zero Offset

To Order Most Popular Models, Specify:

One Channel		Two Channel		Input Type
620-1K	$1260	620-2KK	$1940	K Thermocouple
620-1J	1260	620-2JJ	1940	J Thermocouple
620-1mV	1115	620-2mVmV	1650	mV

Available Off-The-Shelf!

More . . . Strip Chart Recorders With Thermocouple or mV Input



Probe Sold Separately

See the OMEGA Temperature Measurement Handbook for a Complete Selection of Sensors and Accessories

RD146 JF

$745

100 mm chart width
Dual channel
Switchable thermocouple/ mV input

RD 145 SERIES RECORDERS

- Switch Between Type J Thermocouple and mV Input for Pressure Transducer
- Rugged Metal Case for Panel or Bench Operation
- Set Thermocouple Zero Without Signal Input
- 4 Chart Speeds Per Model (.5, 1, 2, 3, 4 cm/min.)
- Compact Size

Available Off-The-Shelf!

To Order, Specify:

One Channel	Two Channel	Range		Input Type
		Low	High	
RD145mV $295	RD146mV $495	0 to 100mV	0 to 1mV	mV
RD145JC 420	RD146JC 745	0 to 100°C 0 to 100mV	0 to 500°C 0 to 500mV	Thermocouple/mV Switchable
RD145JF 420	RD146JF 745	0 to 250°F 0 to 100mV	0 to 1000°F 0 to 500mV	

Other Chart Speeds Available—Consult Sales Department

NEW! Pressure Recorders

4 Inch Chart Models
$225

CT 614

- Accurate and Reliable
- Rugged, All Steel Case With Baked, Hammerloid Enamel Finish or 7 Day Record
- Compact 5 ¼" Square x 2 ¼" D for 4" Chart
- Lightweight: 2 lbs
- Battery Included
- 100 Charts Included FREE!

Consult the Complete OMEGA Pressure and Strain Measurement Handbook for Replacement Pens and Charts

To Order, Specify:

Model	Price	Chart Size	Pressure
CT614-100-7	$225	4"	0 to 100 PSIG
CT614-100-1	225		
CT618-100-7	325	8"	
CT618-100-1	325		

In Stock for Fast Delivery!

Temperature and Humidity Recorders

4 Inch Chart Models
$425

CT 424

- Temperature and Humidity in One Recorder
- Accurate and Reliable
- Rugged: All Steel Case With Baked, Hammerloid Enamel Finish
- 1 or 7 Day Record
- Compact: 5 ¼" Square x 2 ¼" D for 4" Chart
- Lightweight: 2 lbs
- Battery Included
- 100 Charts Included FREE!

Consult the Complete OMEGA Pressure and Strain Measurement Handbook for Replacement Pens and Charts

To Order, Specify:

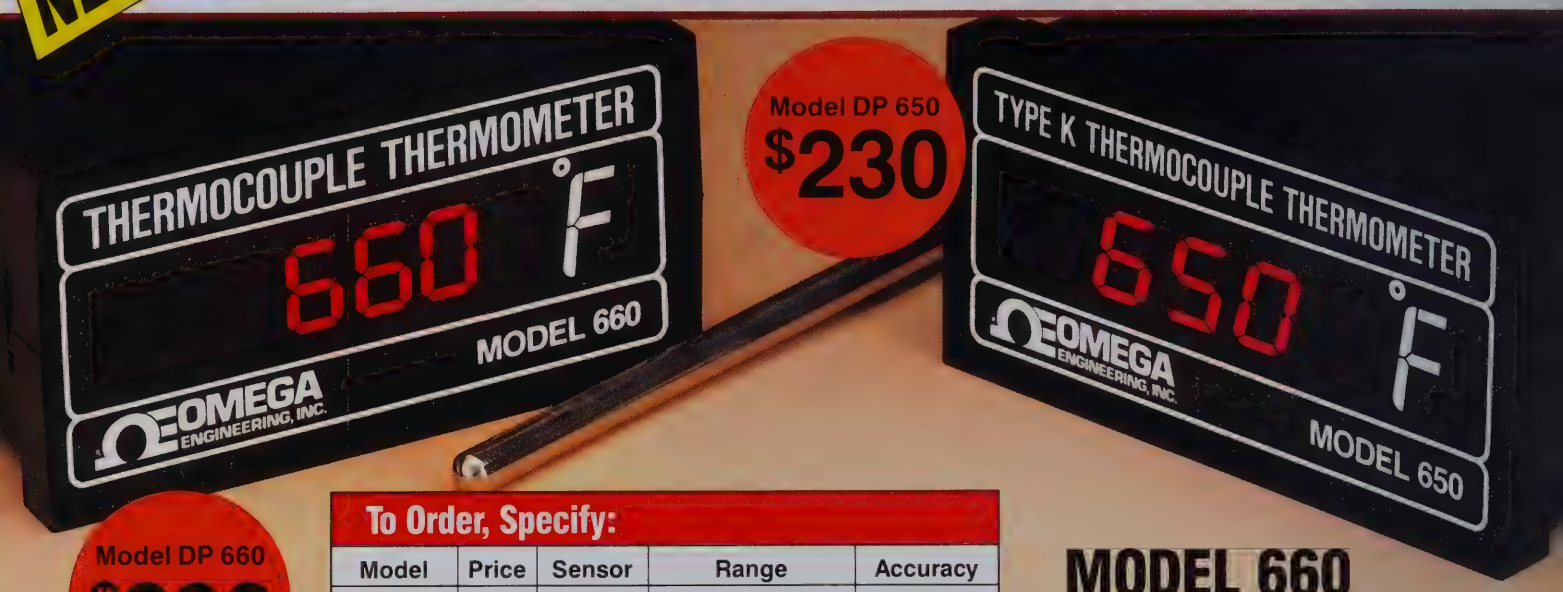
Model	Price	Chart Size	Ranges	
			Temperature	Humidity
CT424-1	$425	4"	0 to 100°F	0 to 100% RH
CT424-7	425			
CT428-1	525	8"	–20 to 120°F	0 to 100% RH
CT428-7	525			

Temperature only models available—Consult Sales Department.

NEW!

Thermocouple Panel Meters

Microprocessor Based Accuracy



Model DP 650
$230

Model DP 660
$290

To Order, Specify:

Model	Price	Sensor	Range	Accuracy
DP650-J	$230	Type J	−165 to 760°C −265 to 1400°F	±0.7°C ±1.3°F
DP650-K	230	Type K	−50 to 1250°C −58 to 1999°F	±0.9°C ±1.6°F
DP650-T	230	Type T	−150 to 400°C −238 to 752°F	±0.8°C ±1.4°F
DP650-E	230	Type E	−100 to 870°C −148 to 1598°F	±1.0°C ±2.0°F
DP650-R	230	Type R	0 to 299°C 300 to 1760°C	±6.0°C ±1.5°C
DP650-S	230	Type S	32 to 571°F 572 to 1999°F	±12.0°F ±3.0°F
DP660	290	Switchable, uses all above sensors		

MODEL 660

- High Accuracy at Low Price
- 1° Resolution
- °C/°F Switchable
- Serial ASCII Output Standard

Dimensions:
1.89″ H × 3.78″ W × 5.13″ D

Change Calibration As Needed For J, K, T, E, R, or S

All Models In Stock for Fast Delivery!

Bench Cases Available

For Most Meter Models!

To Order, Specify:

DS OPTION $60
Standard features are 115 V ac power, ON/OFF Switch, Power Cord and Compensated Female Connector.

DS-01 OPTION $195
Adds a Rechargeable Ni-Cad Battery Pack which will last through 8 hours continuous service.

DSS OPTION $125
Same features as DS Case but with a 10-position Front Panel Rotary Switch. Inputs are through terminal block.

DSS-01 OPTION $260
Adds the same Rechargeable Ni-Cad Battery Pack.

Dimensions:
3.25″ H × 9.75″ W × 10.25″ D

DSS-650
$355
pictured

Probe Sold Separately

Consult Sales Department for availability of Bench Cases

NEW!

RTD's and Thermistors

Microprocessor Based Accuracy

Sensor Sold Separately

Model DP651
$295

See The Omega Temperature Measurement Handbook

DP 651

All the Accuracy and Reliability Factors of the Model 661 but with a Microprocessor Dedicated to a Single Measurement Parameter.

Available Off-The-Shelf!

Expanded 651/661 Series Meters

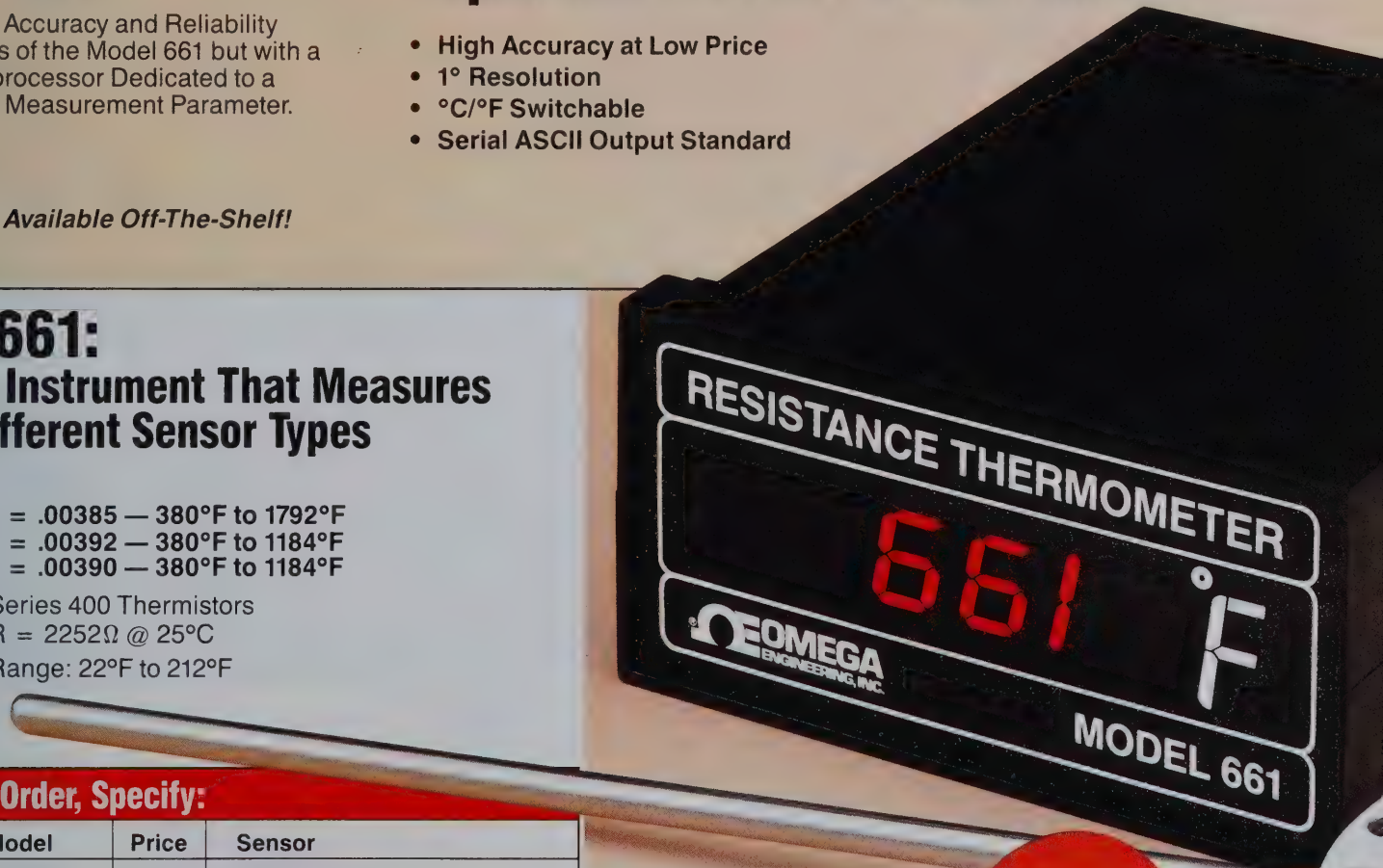
- High Accuracy at Low Price
- 1° Resolution
- °C/°F Switchable
- Serial ASCII Output Standard

DP661:

One Instrument That Measures 4 Different Sensor Types

RTD α = .00385 — 380°F to 1792°F
α = .00392 — 380°F to 1184°F
α = .00390 — 380°F to 1184°F

Series 400 Thermistors
R = 2252Ω @ 25°C
Range: 22°F to 212°F



To Order, Specify:

Model	Price	Sensor
DP651-385	$295	RTD α = .00385
DP651-392	295	RTD α = .00392
DP651-390	295	RTD α = .00390
DP651-2252	295	Series 400 Thermistor R = 2252Ω @ 25°C
DP661	345	Switchable, all the above

In Stock for Fast Delivery!

Dimensions:
1.89″ H x 3.78″ W x 5.13″ D

Accuracy:
RTD Models ±.6°F ± ½ LSD
Thermistor Model ±.8°F ± ½ LSD

Model DP661
$345

Sensor Sold Separately

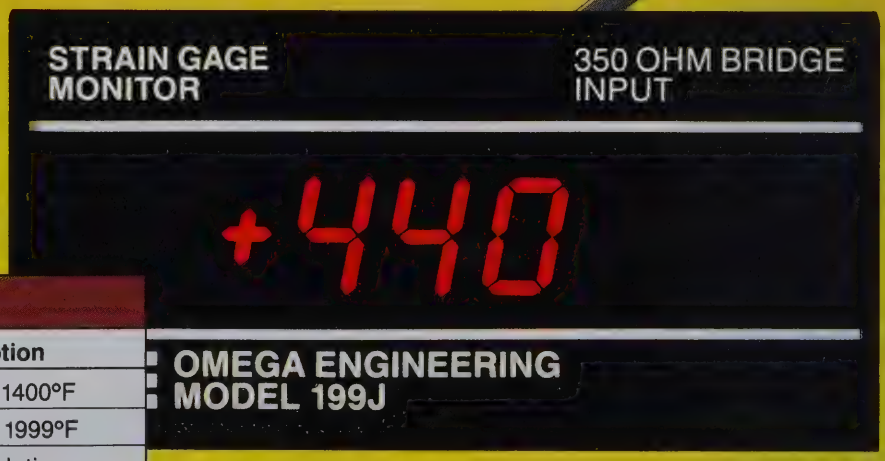
See The OMEGA Temperature Measurement Handbook

Process Monitors

Expanded 199 Series Fulfills All Your Process Monitoring Needs

FAMILY FEATURES:

- **Front panel DIP switch setup; easy, fast and flexible calibration**
- **Screw-terminal connector; quick, solderless installation**
- **Wide input ranges built in; handles wide swings of input signals**
- **Parallel BCD ouput; communicates with computer peripherals, printers**
- **Analog output; transmits data to auxiliary monitoring and recording equipment**
- **High-impact plastic or rugged metal case; operates in severe environments**
- **Large, bright LED digits; clear, easy viewing from a distance**
- **Wide operating temperature range; –10 to +50°C**



Most Popular Models

Model	Price	Sensor Type	Description
199A-JF	$257	Type J thermocouple	–170 to 1400°F
199A-KF	257	Type K thermocouple	–50 to 1999°F
199B-P2C	275	100Ω RTD	0.1° resolution
199C-F1	247	Any pulse or sine current	Two wire, floating and isolated, dc coupled
199D-I2	232	Current	4 to 20 mA
199E-E2	232	dc Voltage	0 to 10 V
199F-V2	112	dc Voltage and current	200 mV dc
199G-A1	221	ac Voltage and current	0 to 199.9 V
199H-R1	232	True RMS	0 to 1.999 V
199J-SG	328	Pressure and strain	5 to 30 mV

NOW! Strain and Pressure!

199J-SG
$328

Accepts Bridge Configuration Strain Gages and Pressure Transducers.

In Stock for Fast Delivery!

NEW! Pressure Indicators

For Pressure Transducers, Load Cells and Strain Bridges

- **High Impact Plastic Case**
- **Jumper Selectable Decimal Points**
- **Scalable Input 20 to 100 mV FS**
- **Scalable Display FS = 500 to 1999 for 20 to 100 mV Input**
- **Zero Offset ±6% F.S. (±120 counts)**
- **5 or 10 V Excitation**

Meter provides Bridge Excitation and Digital Readout Scalable to almost any Engineering Unit, i.e., Weight, Pressure, Volume, etc.

Two Setpoints* With Two 0.5A Relays and Analog Output

Dimensions:
1.8" H × 4.05" W × 4.23" D

*Requires Two External 20K Potentiometers

DP350
$375

To Order, Specify:

Model	Price	Description
DP350	$375	Meter with Excitation
*DP352	445	Dual Set Points

Available Off-The-Shelf!

NEW! Digital Strain Meter

Special Features

- Accuracy class 0.025
- Battery-powered for portability
- Carrier frequency 225 Hz
- Full and half bridges can be connected with 60 to 2000
- Large overall measuring range of 20,999 m/m
- Analog output for indicating range ±1999 m/m
- Measuring frequency range 0 to 15 Hz (-1 dB)
- Low bridge excitation voltage of 1 V
- Digitally preset gage factor of 0.50 to 19.99
- Continuously adjustable zero balance ±1250 m/m
- Cable compensation circuit to prevent cable effects
- Complete manual supplied
- Detachable Battery Pack and Adaptor Available
- Batteries Included

A full selection of strain gages and pressure transducers may be found in ***OMEGA's Pressure and Strain Handbook - CALL TODAY!***

To Order, Specify:
DMD20
$1635

Signal Conditioning

Cold Junction Compensation

Simply connect your thermocouple to the input, and the battery powered compensator supplies an mV output referenced to 0°C for use with recorders and voltage readout devices.

Model MCJ

- Small Size
- High Impact Case
- Color Coded

$72 MCJ

Specify Thermocouple Type

Available Off-The-Shelf!

Prices Start At $125 CJ

Model CJ

Specify Thermocouple Type

- Rugged Aluminum Case
- Long Battery Life
- High Reliability
- Output Leads Included
- Nine Calibrations Available Including Tungsten/Rhenium

Signal Amplification

OMNI-AMP IIA
OMNI-AMP IIB

- Battery Powered
- Heavy Duty Case
- Easy To Use
- Gains From X1 to X100
- Battery Status Indicator
- Voltage or Current Output

In Stock for Fast Delivery!

MODEL OMNI-AMP IIB $240

With Cold Junction Compensation (Specify Thermocouple Type)

MODEL OMNI-AMP IIA $175

Without Cold Junction Compensation

Thermocouple Linearization

- °C/°F Switchable
- Battery Test Switch
- High Accuracy
- J or K Thermocouple
- Mates With Male or Female Banana Jack

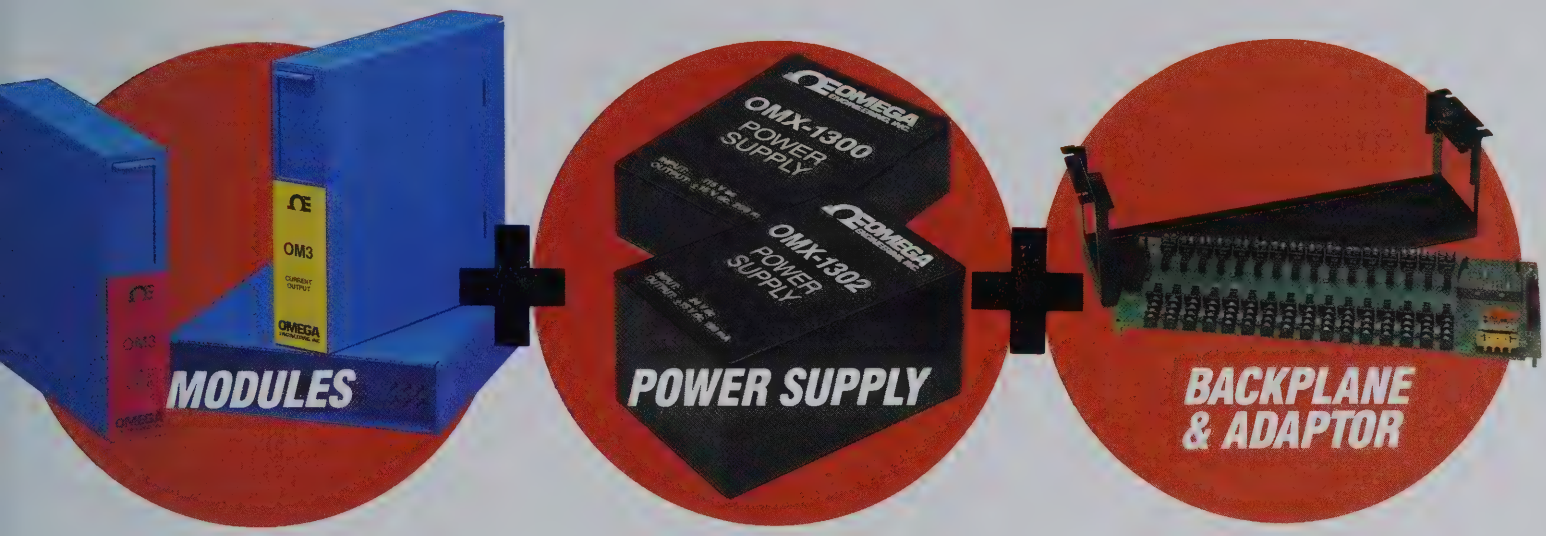
TAC80J or K $99

Provides a Precision 1 mV/degree signal for J or K thermocouples. Cold Junction Compensation is standard. Allows direct temperature recording on your mV recorder.

J Range −40 to 600°C ± 3°C
K Range −20 to 1000°C ± 4°C
Available Off-The-Shelf!

Signal Conditioning System

OM-3 Series



= A COMPLETE SIGNAL CONDITIONING SYSTEM

CONDITIONING MODULES

OMEGA® OM-3 signal conditioning modules accept transducer outputs and provide a 0 to 10 volt and a simultaneous 4-20 mA output for process loop control and alarm functions.

Current Input

Nonisolated Modules **$135**
Common Mode Voltage ± 6.5 V

Model No.	Input Range
OM3-I-4/20	4-20 mA
OM3-I-0/20	0-20 mA

Isolated Modules **$175**
Common Mode Voltage ± 1500 V pk max

Model No.	Input Range
OM3-II-4/20	4-20 mA
OM3-II-0/20	0-20 mA

SEE THE OMEGA TEMPERATURE MEASUREMENT HANDBOOK AND ENCYCLOPEDIA™ FOR COMPLETE SPECIFICATIONS

Strain Gage Input

Model OM3-S-3

The strain gage module provides a bridge excitation voltage of + 10 V and can be used with a bridge resistance of 300 Ω or greater.

Millivolt and Voltage Input

Nonisolated Modules **$135**
Common Mode Voltage ± 6.5 V

Model No.	Input Range
OM3-mV-10	± 10 mV
OM3-mV-50	± 50 mV
OM3-mV-100	± 100 mV
OM3-V-1	± 1 V
OM3-V-5	± 5 V
OM3-V-10	± 10 V

Isolated Modules **mV $200**
Common Mode **V 175**
Voltage ± 1500 V

Model No.	Input Range
OM3-ImV-10	± 10 mV
OM3-ImV-50	± 50 mV
OM3-ImV-100	± 100 mV
OM3-IV-1	± 1 V
OM3-IV-5	± 5 V
OM3-IV-10	± 10 V

POWER SUPPLIES

Module OMX-1300 **$99**
Input Voltage: 105 to 125 V ac, 50 to 400 Hz
Output Voltage: ±15 V
Output Current: ±200 mA

Model OMX-1302 **$106**
Input Voltage: 22.3 V to 26.4 V
Output Voltage: ±15 V
Output Current: ±190 mA

BACKPLANES

- 4, 8, or 16 Channels
- Accepts all OM3 Modules
- Connectors Included

OM3-BP-16
16 Position **$345**

OM3-BP-8
8 Position **240**

OM3-BP-4
4 Position **120**

19" Rack Mount Adaptor Kit
- Accepts OM3 Backplanes

OMX-1330 ..... **$30**

THERMOCOUPLE AND RTD VERSIONS ALSO AVAILABLE

NEW! Display and Control For Pressure

PC-3500

- Easy to Use!
- Limits, Alarms, and Control Functions
- Built-in 5 or 10 V Excitation
- Scalable Inputs from 20 to 100 mV FS
- Scalable Display
  FS = 500 to 1999 for 20 to 100 mV Input
- Zero Offset ±6% FS ±120 Counts
- Jumper Selectable Decimal Point

Model	Price	Description
PC3500-P1	$ 550	One Channel 19″ Rack Model
PC3500-P2	1050	Two Channel 19″ Rack Model
PC3500-P3	1550	Three Channel 19″ Rack Model

In Stock for Fast Delivery!

PC3500-P1
$550

Two and Three Panel Styles Also Available!

Transducer Sold Separately

Analog, Pressure Controllers—I921, I922

Transducer Sold Separately

I921
$250
Single Set Point

I921, I922 Controllers

- Proportional Control Convertible to True ON/OFF
- Single and Dual Set Point Models
- High Impact Plastic Case
- Compact Design

To Order Most Popular Models, Specify:

Single Set Point		Dual Set Point	
I921P-C-60 PSI	$250	I922P-C-60 PSI	$295
I921P-C-100	250	I922P-C-100	295
I921P-C-500	250	I922P-C-500	295
Thermocouple Models - Consult Sales Department For Ranges			
I921J	$220	1922J	$260
I921K	220	I922K	260
I921E	220	I922E	260
I921T	220	I922T	260

Available Off-The-Shelf!
Panel Cutout: 3 5/8″ (92 mm) sq. per DIN-43700.
Depth behind panel 3 7/8″ (98 mm)

See The NEW! OMEGA Pressure And Strain Handbook.

NEW!

Controllers for Pressure and Strain

Controllers for Your Many Process Needs!

- Precision On/Off Control
- Digital Display Scalable to ngineering Units
- Accurate and Reliable at Low Cost
- PID Control and Triac Models Available

Measure And Control

- *Temperature*
- *Pressure*
- *Current*
- *Voltage*
- *Flow/Rate*
- *Strain Gage*
- *True RMS*

Nine Input Types to Choose from

CN-25A for Thermocouple Input
CN-25B for RTD Input
CN-25C for Rate/Flow
CN-25D for Current Loop
CN-25E for dc Voltage (10 V dc max)
CN-25F for dc Voltage (199.9 mV dc max)
CN-25G for ac Line (Average responding)
CN-25H for True RMS
CN-25J for Pressure/Strain

See The NEW! OMEGA Pressure And Strain Handbook For More Pressure Products.

To Order Most Popular Models, Specify:

Single Set Point		Dual Set Point		Description
Temperature Models				
CN25A-JFM1	$406	CN25A-JFM1S1	$432	Type J Thermocouple
CN25A-KFM1	406	CN25A-KFM1S1	432	Type K Thermocouple
CN25C-F1M1	415	CN25C-F1M1S1	441	Frequency to 10 kHz for Pressure
Pressure Transducer Models				
CN25D-I2M1	381	CN25D-I2M1S1	407	Current 4 to 20 mA
CN25E-E3M1	381	CN25E-E3M1S1	407	Voltage to 10 V dc
Strain Gage Models				
CN25J-SGM1	477	CN25J-SGM1S1	503	Strain gage 0.6 to 30 mV/V
Consult Sales Department for Ranges and Other Models				

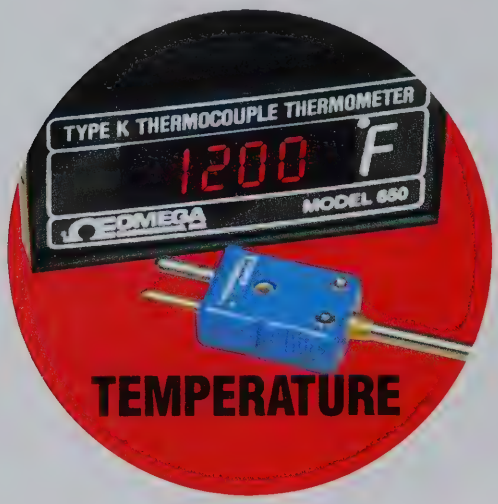
CN25J-SG
$477

Panel Cutout:
3.622″ (92 mm) square
Bezel Dimensions:
4.10″ (104.1 mm) square
Depth Behind Bezel:
6.97″ (170.8 mm)

In Stock for Fast Delivery!

NEW! Lab Monitor 1000

Use the LM-1000 to Monitor:



The LM-1000 Monitors:

Time, Temperature, AC Power, Audio Alarms, Switch Contacts and Battery Status. It Will Report Current Conditions or Auto-Dial A Warning In The Case Of Alarm.

ACCESSORIES:
(connect to 3 available alarm channels)

LM-1001 MAGNETIC REED SWITCH **$12**
Consists of two parts, a magnet in a plastic housing and a switch with screw terminals. Should be mounted on a non-moving surface, in close proximity to one another (less than ⅝" apart). Use copper wire to attach to unit.

LM-1002 WATER LEVEL SWITCH **$42**
Provides early warning of presence or absence of water. To detect presence of water, place switch on an absorbent material. To detect absence of water, rest sensor portion of unit in water. Use copper wire to attach to unit.

LM-1003 REMOTE TEMPERATURE SENSOR **$44**
Used in place of the local temperature sensors to provide remote temperature monitoring. Use 26 awg or heavier copper wire if sensor is more than 100 ft. from the unit. Sensor is epoxy encapsulated in a screw mounted aluminum housing with Teflon insulated leads.

LM-1004 REMOTE LISTENING DEVICE
Set of two one-way intercoms allows remote monitoring of sound. Plug one into a 110 V outlet at the remote location and the other into a 110 V outlet next to the microphone on the unit.

Operates from any standard 110 V outlet with battery backup

Dimensions:
2" H x 8" W x 8½" D

Lab Monitor 1000

A Built-in Voice Synthesizer Reports Locally and Also Phones Anywhere with Automatic Direct Dial

To Order: Specify LM-1000
$195
BATTERIES AND LOCAL TEMPERATURE SENSOR INCLUDED

Plugs into any RJ-11C telephone jack

The LM-1000 Calls Out When There's an Alarm Condition

The LM-1000 automatically reacts to these programmed alarm limits by phoning in sequence up to four numbers. It will call until its message is acknowledged. The Synthesized English Message Includes:

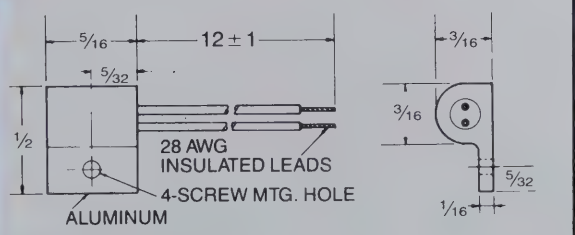
- **The Monitor I.D. Number**
- **The Type of Alarm**
- **The Time**
- **The Temperature**
- **The Power Status**
- **The Sound Level**
- **The Alert Status**
- **The Battery Condition**

The LM-1000 combines modern electronic solid state technology with your existing telephone system to provide an around the clock monitoring and alarm system. While you are absent from your laboratory or office, the **LM-1000** monitors ambient conditions and three dry electrical contacts. In the event of ac power failure, internal alkaline "D" cells take over for up to 15 hours.

The LM-1000 reports status on request. You can call the **LM-1000** at any time to verify the conditions in your office or laboratory. After a preset number of rings, it will reply in Synthesized English with the same information, plus the values of the high and low temperature alarms that you have set.

The LM-1000 will also act as an auto dialer for you when you are in your laboratory or office. In order to dial any of the eight telephone numbers automatically, *DO NOT PICK UP YOUR TELEPHONE.* Simply press the "DIAL" key and then the corresponding phone number key (1 thru 8). When the LM-1000 "beeps", pick up your telephone and your party is connected. If you attempt to call a number (1 thru 8) where no telephone number has been entered, the LM-1000 will say "NO NUMBER".

Remote Temperature Sensor LM-1003
$44



NEW!

μMEGA™ 5000 Intelligent Single Board Stand Alone Measurement and Control System

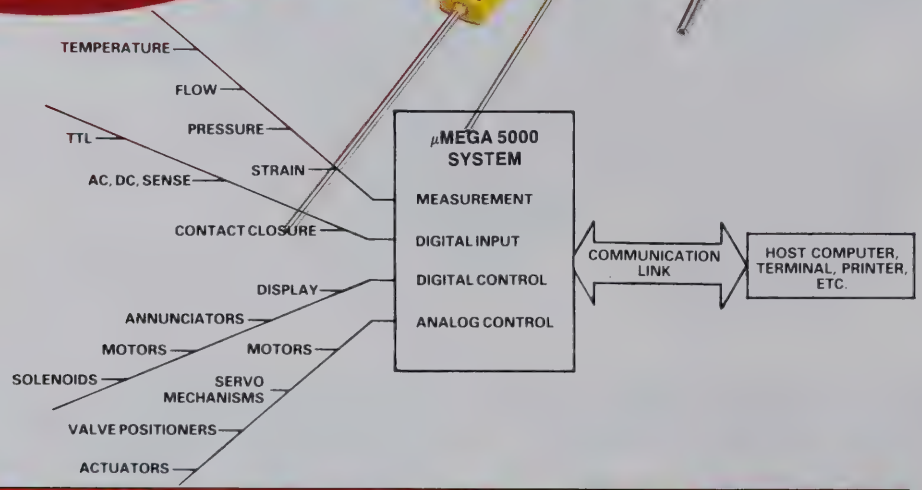
COMPLETE 12 CHANNEL THERMOCOUPLE SYSTEM

$3433
WITH 32 K RAM

- **Complete Stand-Alone System**
- **On-Board Computer Uses Basic**
- **User Friendly**
- **Up to 84 Channels**
- **Serial Communications through any RS232C, RS422, RS423, or 4-20 mA Port**

The μMega 5000 is designed for applications requiring distributed intelligence or local front ends in industrial process control, machine control, energy management, product test, supervisory control and data acquisition (SCADA), and pilot plants. It is also well-suited as an intelligent front end for any personal computer in R & D and laboratory applications, for measurements employing thermocouples, strain gages, RTDs, current transmitters, and low- or high-level voltages and currents, and for control involving binary switching or sensing.

Stored in read-only memory (ROM) is the μMEGA BASIC operating system, which allows novice or experienced users to create and store powerful measurement and control programs. On-board plug-interchangeable signal conditioning modules combine ±1000 V isolation, sensor excitation, and amplification for direct screw-terminal connection of a variety of sensors. Digital I/O channels provide direct interface to contact closures, TTL levels or high level ac and dc voltages (with μMEGA Solid State Switches). Because the μMEGA 5000 is compatible with the OMEGA μMEGA series of expander boards and signal-conditioning modules, users can connect additional analog and digital I/O boards to suit the specific number and kinds of input/output channels to fit the needs of the application.



Input Modules for μMEGA 4000, μMEGA 5000

Input Type, Span	RTD Nonisolated Low Level with Excitation	Thermocouple (TC) Isolated Low Level
dc, +25 mV, +50 mV, +100 mV		x
Thermocouple types J, K, T, E, R, S, B, C		x
100 Ohm Platinum RTD $\alpha = .00385$	x	
100 Ohm Platinum RTD $\alpha = .00392$	x	
Strain Gage, +30 mV	x	
Strain Gage, +100 mV	x	
AD590 Solid State Sensor	x	

NEW! LOW COST!
EXPANDER BOARD FOR μMEGA SYSTEMS
μMEGA 4015
$804

Consult Sales Department For Ranges

Available Off-The-Shelf!

μMEGA™ Data Acquisition The Low Cost Solution

The μMEGA 5000 consists of a single master board with 4, 8 or 12 analog inputs, 8 digital outputs, and 8 digital inputs, of which two may be used as pulse inputs. The 5-MHz, 16 bit 8088 CPU processes the data collected from the input channels, sends out control signals, and communicates with other equipment as directed by the program installed in memory. Up to six μMEGA Expander Boards may be used with the μMEGA 5000.

Simply connect sensors directly to the system and all thermocouples are cold-junction compensated, RTD's are excited, noise is filtered and sensor response is linearized. A simple command from the host is all that is required to access the data in engineering units.

COMMON μMEGA 5000 SYSTEM CONFIGURATIONS:

μMEGA 5000 12 CHANNELS	PRICE EA.	μMEGA 5000 48 CHANNELS	PRICE EA.
1 ea. μMEGA 5000-12 TC	$3,259	1 ea. μMEGA 5000-12 TC	$3,259
		2 ea. μMEGA 4015-A	804-730
		1 ea. μMEGA 4010-4 TC-8 RTD	1,474
		1 ea. OMX-1389 4 Board Card Cage	275
1 ea. OMX-1835D Power Cord	49	1 ea. OMX-1835D Power Cord	49
		1 ea. OMX-1832 Communications Connector	7
		2 ea. OMX-1804 Digital I/O Connector	15
12 Total Input Channels	3,308	48 Total Input Channels	6,702

48 CHANNEL SYSTEM
$6702

Analog TO RS232C Computer Interface

WB 31

- **2 Analog Inputs 0 to ±5 V**
- **4 TTL Outputs**
- **Uses any RS232C or 20 mA Port**
- **No Special Programming Required**

A complete analog measurement and digital control package—WHITE-BOX™—WB31. It's low cost and easy to use. Just connect an analog process signal (between −4.999 and +4.999 volts) to one of the two analog inputs and plug the WB31 into your computer. No expensive parallel interface or bus configuration cards are needed. Any serial RS232C or 20 mA port will work!

WB31
$395
Two Channel Model

NEW!

Use Your Apple II Computer to

✓Monitor ✓Datalog ✓Control

With OMEGA® White Box™ Products.

WB-AIO-A
Includes Processor Board, I/O Board, and Software FREE!

NO PROGRAMMING NECESSARY!

WB-AIO-A
$1270

- **Analog Inputs**
  - Thermocouples
  - Pressure Sensors
  - Strain Gages
  - Flow Meters
  - Current Loops
  - Voltages
  - Currents
  - Potentiometers

- **Digital Inputs**
  - Switches
  - Level Sensors
  - TTL, CMOS

- **Digital (Control) Outputs**
  - Relays
  - Solid State Relays
  - Annunciators
  - Lamps
  - LED'S

Simplify data acquisition and control at low cost with the **OMEGA WB-AIO-A.** Designed for laboratory and industrial uses such as data logging, process monitoring and controlling, it measures temperature, pressure, flow and other analog inputs from voltage or current sources. Linearization and cold junction compensation for 10 different thermocouple types are taken care of automatically. Use it interactively, by responding to alarms, operating output controls, and printing data on command.

The OMEGA WB-AIO-A turns an Apple II Computer into a sophisticated process control system. Select a set point to maintain constant temperature pressure, etc. Enter a dead band to set the preciseness of the control. Any combination of digital inputs can be set to correspond to the output switches.

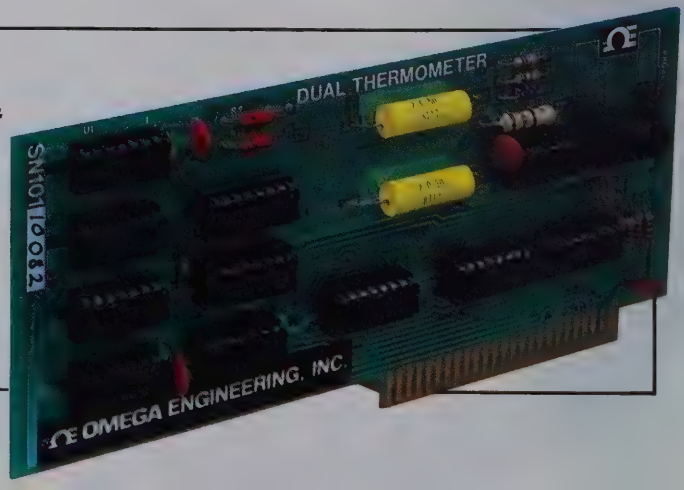
The WB-AIO-A can also gather data unattended. It features automatic power failure recovery.

Consult the OMEGA ENGINEERING Computer Interface Handbook

Also Available: Thermistor Input

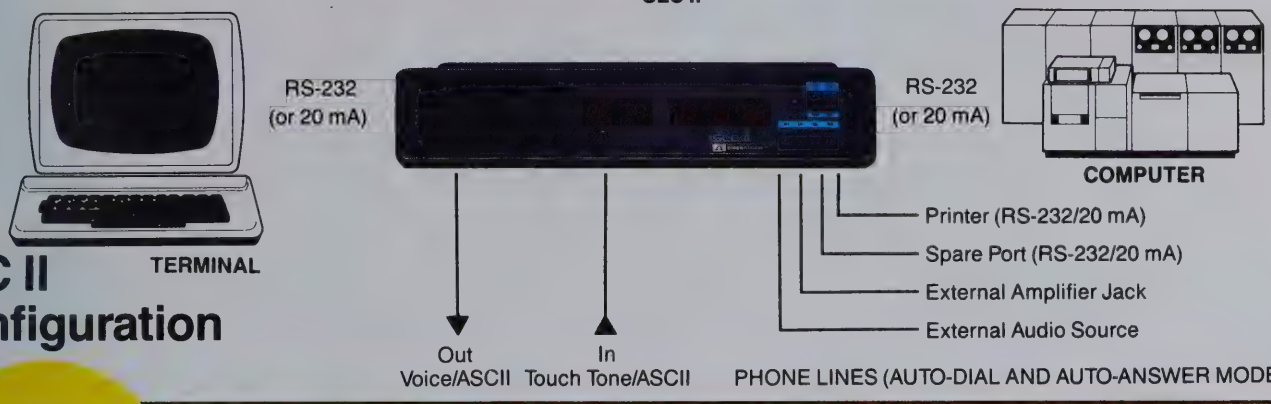
WB-DTK I for IBM PC

WB-DTKA for Apple II



Monitor Remote Process Communications With Your Computer!

SLCII TALKING MONITOR



SLC II Configuration

SLCII
$3900

In Stock for Fast Delivery!

- **Monitors process data stream for up to 32 programmable key words**
- **85 distinct programmable actions when key word is detected**
- **RS232C or 4-20 mA communications**
- **Easy to use**

Computer Accessories

EIA/RS232C Compatible Data Cables

- Low Profile (only .620" high)
- Total Stress Relief
- Permanent Contact Shielding
- Tinned Connectors for Positive Grounding

OC9-NMF5
$25

To Order, Specify:

Part No.	Price per 5 ft.	Modem/ Null	Description
OC4MMF-5	$20	Modem	Four line with Handshake jumpers
OC4NMF-5	20	Null Modem	
OC9MMF-5	25	Modem	Nine line cable wired 1-8 and 20
OC9NMF-5	25	Null Modem	

Available Off-The-Shelf!

Other Lengths and Styles Available—Consult Sales Department

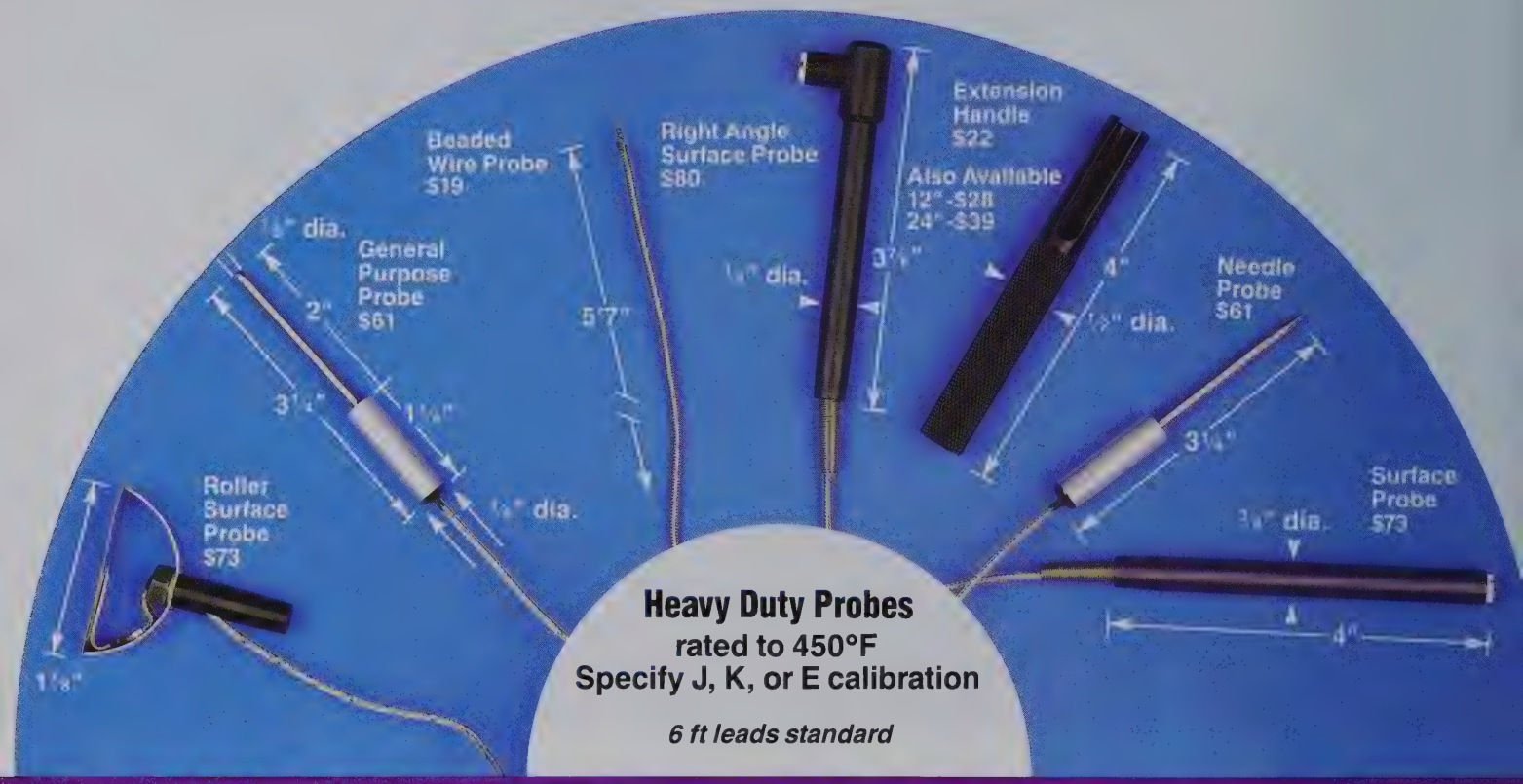
5 ¼" Floppy Diskettes

- Double Sided
- Double Density
- Soft Sectored
- Unformatted

To Order, Specify:

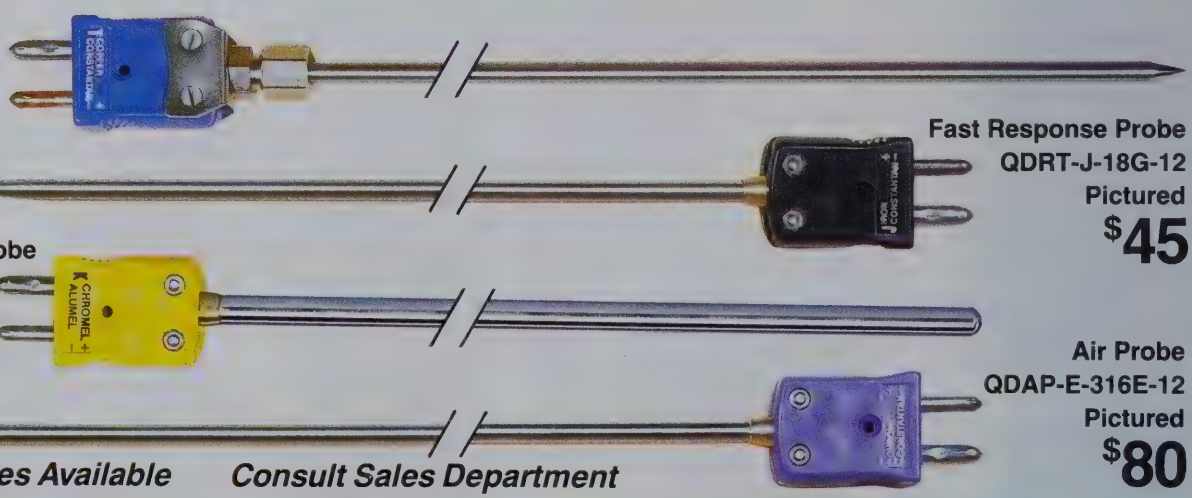
DISK 5S
$45
Package of 10

OMEGA® Offers A Full Selection of Thermocouples


Beaded Wire Probe $19
Right Angle Surface Probe $80
Extension Handle $22
Also Available 12" -$28 24" -$39
General Purpose Probe $61
Needle Probe $61
Roller Surface Probe $73
Surface Probe $73
Heavy Duty Probes
rated to 450°F
Specify J, K, or E calibration
6 ft leads standard

Quick Disconnect Probes

With Custom Measurement Tips— Specify J, K, T, or E Calibration



Penetration Probe
QDNP-T-316G-12
Pictured
$40

Fast Response Probe
QDRT-J-18G-12
Pictured
$45

General Purpose Probe
ICSS-14G-12
Pictured
$31

Air Probe
QDAP-E-316E-12
Pictured
$80

Many Other Styles Available *Consult Sales Department*

Handles available in high impact plastic or aluminum for your Quick Disconnect Probes!

SDX-OST-K-OST
Pictured
$25

FEP* Coated Thermocouple Probes

Now In Stock! Exclusive from OMEGA®

- Chemically inert
- Electrically insulated
- Abrasion resistant
- To 400°F
- Quick Disconnect Style
- 1/16" or 1/8" diameter
- Grounded Junction

$47 Each

To Order, Specify:

Part Number	Price	Probe Dia.	Calibration
ICSS-116G-12-FEP	$47	1/16"	TYPE J
ICSS-18G-12-FEP	47	1/8"	
CASS-116G-12-FEP	47	1/16"	TYPE K
CASS-18G-12-FEP	47	1/8"	
CPSS-116G-12-FEP	47	1/16"	TYPE T
CPSS-18G-12-FEP	47	1/8"	
CXSS-116G-12-FEP	47	1/16"	TYPE E
CXSS-18G-12-FEP	47	1/8"	

*Fluorinated Ethylene Propylene

Off-The-Shelf Delivery!

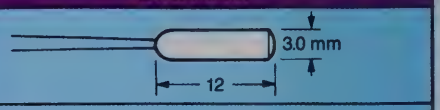
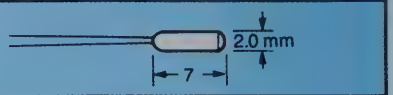
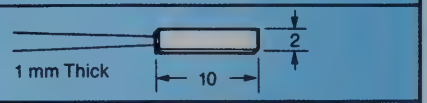
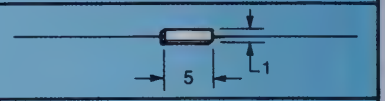
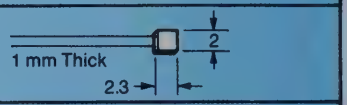
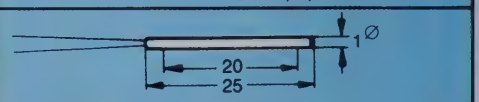
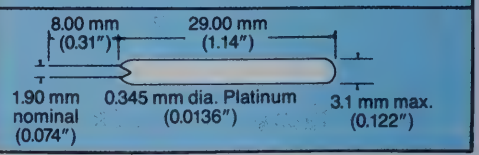
Thermistors For High Accuracy and Repeatability

SERIES 400	SERIES 700	CONFIGURATION	DESCRIPTION	TEMP. RATING	APPLICATION
ON-401-PP $50	ON-701-PP $54	9/64" D. 5/16" MAX. 1/4" MAX.	**General Pupose.** Vinyl tipped, most rugged probe. Used for short-term water and sub-soil readings. Waterproof construction available on special order.	212°F 100°C	Buried
ON-403-PP $70	ON-703-PP $70	7/8" 4 1/2" 5/32" D.	**Tubular.** Stainless steel probe for rugged duty. Often used for liquid immersion. Probe is immersible only to cap.	212°F 100°C	Liquid
ON-404-PP $75	ON-704-PP $81	3/16" D.	**Tubular-Glass.** Chemically inert for liquid immersion use. Thermometric titration. Freezing point determination. Pyrex, 5" long.	212°F 100°C	Liquid
ON-405-PP $70	ON-705-PP $73	1 7/8" 1/2" D. 1/4" D.	**Air Temperature.** Stainless steel probe suitable for test rooms, incubators, remote air readings, monitoring of gas streams, etc.	212°F 100°C	Gas
ON-409-PP $62	ON-709-PP $63	1/8" 7/16"	**Attachable Surface Temperature.** Stainless steel cup, epoxy-backed. Easy to tape on flat surfaces. Good for heat loss or compression efficiency study of piping.	212°F 100°C	Surface
ON-410-PP $70	ON-710-PP $75	1 11/16" 4 1/2" 1/8" N.P.T. 5/32" D.	**Tubular With Fitting.** Rugged, stainless steel probe with pipe fitting. Suitable for taking readings in pipes or inside closed vessels.	212°F 100°C	Gas, Liquid

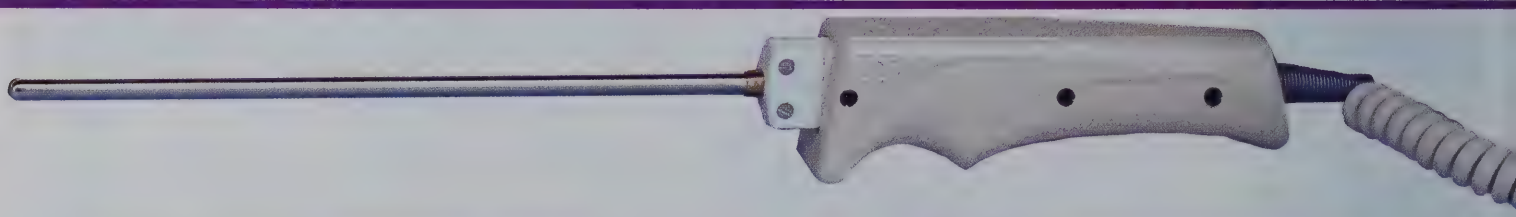
Prices Include Phone Plug and Ten Feet of Vinyl Leads

Many Other Styles Available—Consult Sales Department

RTD Sensors 100 Ω, α = .00385

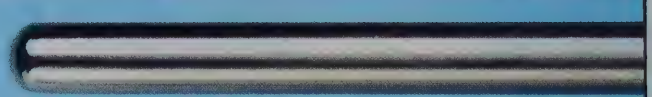
ELEMENTS PART NUMBER	PRICE	NOMINAL RESISTANCE OHMS	TEMPERATURE RANGE	DIAGRAM
W2102	$32	1 × 100	−50°C to +600°C	
W2103	$36	1 × 100		
F2101	$19	1 × 100	−50°C to +250°C	
F2102	$19	1 × 100		
F2104	$19	1 × 100		
F2105	$19	1 × 100		
1 Pt 100 K20 10	$28	1 × 100	−200 to +750 intermittently up to 850	
100 P 30	$22	1 × 100	−220°C to 600°C	

RTD Integral Handle Probes

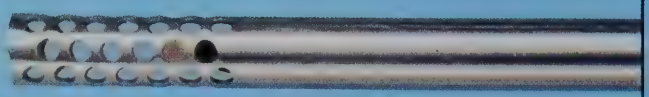


Custom measuring tips

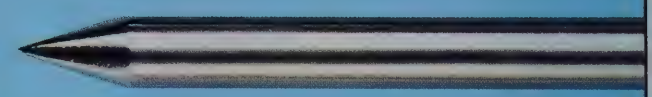
$105 Fast Response Probe 1/8" O.D.
Complete Probe/Handle Assembly
PRS-FR-100-E-12



$95 General Purpose Probe 3/16" O.D.
Complete Probe/Handle Assembly
PRS-GP-100-E-12



$145 Air Probe 3/16" O.D.
Complete Probe/Handle Assembly
PRS-AP-100-E-12

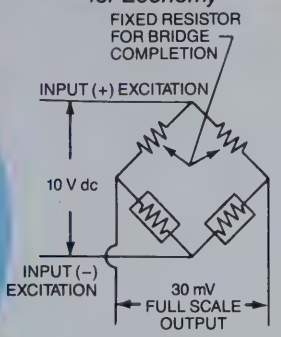


$105 Penetration Probe 3/16" O.D.
Complete Probe/Handle Assembly
PRS-NP-100-E-12

Many Other Styles Available—Consult Sales Department

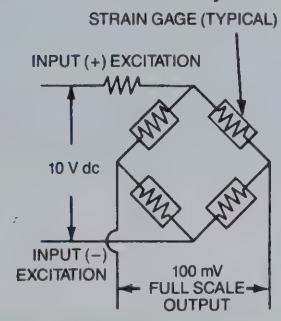
NEW! Pressure Transducers

300 Series Half Bridge for Economy



TWO STRAIN GAGES IN A BRIDGE (HALF BRIDGE UNIT)

302 Series Full Bridge for Accuracy



FOUR STRAIN GAGES IN A BRIDGE (FULL BRIDGE UNIT)

SPECIFICATIONS

Excitation: Nominal 10 volts DC
Output: 30 mV full scale ±1 mV (Nominal 3 mV/V)
Input Impedance: 1000 ohms minimum
Output Impedance: 120 ohms nominal
Accuracy: ±0.5% of full scale at +75°F (Includes linearity, hysteresis, and repeatability)
Zero Balance: ±1 mV at +75°F
Compensated Temperature Range: +30°F to +110°F

To Order, Specify:

Model PX 300	Price	Range
PX 300-150G-V	$98	0- 150 PSIG
PX 300-500G-V	98	0- 500 PSIG
PX 300-1 KG-V	98	0-1000 PSIG
PX 300-5 KG-V	98	0-5000 PSIG
Model PX 302	**Price**	**Range**
PX 302-050G-V	$136	0- 50 PSIG
PX 302-100G-V	136	0- 100 PSIG
PX 302-300G-V	136	0- 300 PSIG
PX 302-500G-V	136	0- 500 PSIG
PX 302-1.5KG-V	136	0-1500 PSIG
PX 302-3 KG-V	136	0-3000 PSIG
PX 302-5 KG-V	136	0-5000 PSIG

Pressure Transducers utilize semiconductor gages which are epoxy bonded to a metal diaphragm. Pressure applied to the diaphragm through the pressure port produces a minute deflection which introduces strain to the gages. The strain produces an electrical resistance change proportional to the pressure. Four gages (or 2 gages with fixed resistors) form a Wheatstone Bridge.

See The OMEGA PRESSURE AND STRAIN MEASUREMENT HANDBOOK for a Complete Selection

Strain Gages *Available Off-The-Shelf!*

Type series / Diagrams to actual size	Model No.	Price	nominal resistance [Ohm]	dimensions [mm] grid a	grid b	carrier c	carrier d	max. permitted bridge energizing voltage [V rms]	contents of package [pieces]	Fig.
• **Ribbon Leads Parallel to grid** **LY 11** Temperature characteristic matched to steel with $\alpha = 11 \cdot 10^{-6}$/K [6.1 ppm/°F]	HBM 0.6/120 LY 11	$51.50	120	0.6	1.0	5.0	3.2	1.5	10	1
	HBM 1.5/120 LY 11	45.00	120	1.5	1.2	6.5	4.7	2.5	10	2
	HBM 3/120 LY 11	40.00	120	3	1.4	8.3	4.7	4.5	10	3
	HBM 6/120 LY 11	43.50	120	6	2.8	12.8	6.3	9	10	4
	HBM 10/120 LY 11	55.50	120	10	4.9	18.5	9.5	15	10	5
	HBM 3/350 LY 11	46.00	350	3	1.5	8.3	4.7	9	10	≈3
	HBM 6/350 LY 11	46.00	350	6	2.9	12.8	6.3	15	10	≈4
	HBM 10/350 LY 11	76.50	350	10	5	18.3	9.5	26	10	≈5
• **Small Area Rosette 0°/45°/90° Solder Pad Terminals** **RY 31** **0°/45°/90° rosette** Temperature characteristic matched to steel with $\alpha = 11 \cdot 10^{-6}$/K [6.1 ppm/°F]	HBM 6/120 RY 31	100.50	120	6	1.1	14	—	3.5	5	1
	HBM 10/120 RY 31	79.50	120	10	2.3	18	—	6	5	2
	HBM 15/120 RY 31	94.00	120	15	2.4	23	—	8.5	5	—
RY 33 **0°/45°/90° rosette** Temperature characteristic matched to aluminum with $\alpha = 23 \cdot 10^{-6}$/K [12.7 ppm/°F]	HBM 6/120 RY 33	100.50	120	6	1.1	14	—	3.5	5	
	HBM 10/120 RY 33	79.50	120	10	2.3	18	—	6	5	2
	HBM 15/120 RY 33	94.00	120	15	2.4	23	—	8.5	5	—

HIGHLIGHTED MODELS IN STOCK FOR FAST DELIVERY

OMEGA® Offers A Complete Selection of

Thermocouple Wire and Insulation!

Our most popular wires, stocked in pre-spooled lengths for immediate delivery.

From Bare Wire for Thermocouples 0.0005 Dia.

To Nextel Insulation Capable of 2600°F

AND EVERYTHING IN BETWEEN!

Most Popular Wires:

Wire	T/C Type	Insulation	Wire Gage	Price per 25 ft.	50 ft.	100 ft.	200 ft.
GG-J-20	J	Glass Braid	20	$19.50	$31.00	$ 54.00	$ 93.00
XC-K-20	K	Nextel Fiber	20	53.15	85.00	148.75	255.00

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Solid State Temperature Sensor

Model AD590

Two Styles Available:

- ✓ *Low Cost Metal TO-52 Case*
- ✓ *Miniature Ceramic Flat Pack*

Two Accuracies Available:

- ✓ *J For Low Cost*
- ✓ *K For Increased Accuracy*

- **Linear Current Output**
- **Broad Range −55 to 150°C**
- **No Linearization Circuitry Required**
- **Versatile and Economical**

Just power it up and measure the absolute temperature (Kelvin). No linearization, amplification or cold junction compensation is required (fig. 1). To convert reading to °C, just subtract 273.15.

The advanced technology in the AD590 is especially suited for special temperature measurement and control applications between −55 and 150°C when solid state reliability, linearity and accuracy are required. The AD590 can be used to determine minimum, average, and differential temperatures, in addition to being used for thermocouple cold junction compensation and temperature control applications. The size and responsiveness of the AD590 make it perfect for uses where size is a consideration, such as on PC boards or heat sinks.

AD590 Applications

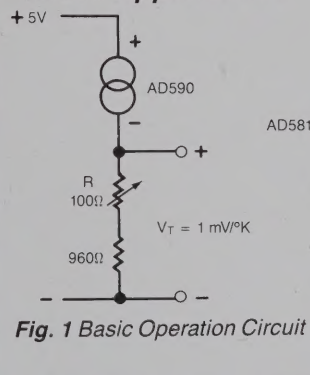


Fig. 1 Basic Operation Circuit

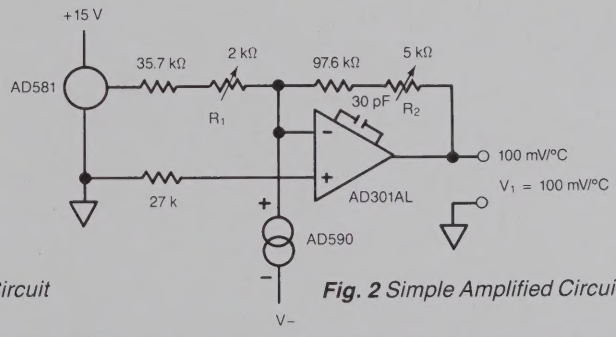


Fig. 2 Simple Amplified Circuit

To Order, Specify:

Model	Flat Pack	TO-52 Case	Linearity
AD590J	**AD590JF $9.00**	**AD590JH $4.50**	±1.5 C
AD590K	**AD590KF $14.50**	**AD590KH $8.75**	±0.8 C

Specifications

Absolute Maximum Ratings:

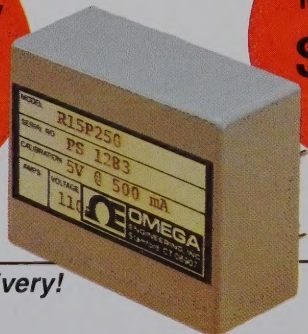
Forward Voltage (E+ to E−): +44 V
Reverse Voltage (E+ to E−): −20 V
Breakdown Voltage (case to E+ or E−): ±200 V
Lead Temperature: +300°C
Power Supply
Voltage Range: +4 to +30 V dc

Output

Nominal Current Output at 25°C (298.2 K): 298.2 μA
Nominal Temperature Coefficient: 1μA/K
Calibration Error: J: ±5.0°C max (K: ±2.5°C)
Absolute Error: w/o external calibration adjustment: J: ±10.0°C max (K: ±5.5°C); W/25°C error set to zero J: ±3.0°C max (K: ±2.0°C)
Repeatability: ±0.1°C max
Long Term Drift: ±0.1°C/month max.

Accessories

Regulated 5 V dc Power Supply MODEL PSP5 $135



Multimeter MODEL 880 $134

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